Medical Inspection of Schools of Philadelphia

REPRINT FROM THE

ANNUAL REPORT

OF THE

Department of Public Health and Charities

FOR THE YEAR 1912

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PHILADELPHIA
DUNLAP PRINTING COMPANY
1913

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By transfer

JUL 8 1914

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Superintendent of Schools,

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Head Nurse,

E. LOUISE JOHNSON.

INTRODUCTION

In order to meet the many inquiries which are being made for information as to the organization, methods and results of the work of medical inspection of school children in Philadelphia, it has been found advisable to prepare this pamphlet, which contains that portion of the annual report of the Department of Public Health and Charities for 1912 which directly relates to the subject matter, together with the report of the nurses employed by the Board of Education.

Medical inspection of the public schools is performed in accordance with the provisions of Article XV of the "School Code of Pennsylvania," authorized by Act of Assembly, May 18, 1911; and the same inspection of parochial and private schools is performed in pursuance of other Acts of Assembly which authorize the Department to safeguard and promote the public health of the City of Philadelphia.

Medical inspection of public schools was begun when the Bureau of Health was a part of the Department of Public Safety, and was at first confined to sanitary inspection of the school buildings and premises. Upon the creation of the Department of Public Health and Charities by Act of Assembly in 1903 the Department proceeded to reorganize the work of medical inspection, and the staff of twelve assistant medical inspectors was increased to fifty. The City was divided into districts and daily visits were made to the schools by the assistant medical inspectors. From this date the development of

this phase of public health work in Philadelphia has been steady and progressive.

While medical inspection of school children is intimately related to the work of the Department in the care and prevention of communicable diseases, and the classification of physical defects is interesting, yet the detection of the defects when not followed by corrective measures is of but little value in promoting the public health. Attention was early directed to the fact that recommendations to parents for correction of physical defects in children were, in many cases, not complied with, and that to meet this condition it would be necessary to supplement the work of the medical inspectors with follow-up visits to the homes of the children whose parents did not carry out the recommendations of the school physician. The school nurse was employed to perform this important service, with the gratifying result that in the schools provided with nurses 85 per cent. of the physical defects of children were removed, as compared with 15 per cent. removed in schools not provided with nurses. Particular attention was directed to the effects of defective vision, not only as to the arrested physical and mental development of these cases, but also as to the economic aspect of this problem. Investigation showed that in many cases the parents were too poor to provide the glasses required by these children, and in consequence the Municipal Eye Dispensary was organized in 1907, and has been successfully conducted from that time.

The successful operation of the Eye Dispensary by the City led, naturally, to the study of ways and means by which to secure needed dental attention to the large proportion of untreated cases in children reported to have dental caries. Effective co-operation of the dental colleges in the City was first secured, and many cases were treated

in the clinics of these colleges. However, a still too great proportion of uncorrected defects of this kind was reported, and here, again, effective co-operation was secured. The dental societies of the City furnished a corps of volunteer operators, working under the direction of a committee from these societies, and a Municipal Dental Dispensary was opened in the fall of 1910 and has since been successfully conducted. The first years of operation proved the practicability of the enterprise, and for 1912 a paid corps of dentists was provided by City Councils.

ANNUAL REPORT

OF THE

MEDICAL INSPECTION

OF THE

PAROCHIAL AND PRIVATE SCHOOLS

FOR THE YEAR 1912

Philadelphia, December 31, 1912.

DR. A. A. CAIRNS,
Chief Medical Inspector.

DEAR SIR:—I beg leave to submit herewith a tabulated statement of the work done by the Parochial and Private School Medical Inspectors for the months of February, March, April, May, June, September, October, November and December of the year 1912.

By direction of the Department of Health and Charities of Philadelphia medical inspection was started in the parochial and private schools February 1, 1912, no previous inspection having been done in these schools.

The first two weeks of February were required to get the system into running order. Little difficulty was experienced, however, as the advantages of the system were promptly recognized by both the Superintendent of Parochial Schools, Rev. P. R. McDevitt, and other school authorities, and prompt co-operation was given to the work.

The City was divided into twenty districts, each district having about five schools and an average number of pupils. The original intention was to detail twenty men to this work, but when it was started only sixteen men were available. This largely increased the duties of each inspector, but all the districts were covered and the schools visited every day. The total number of children in the parochial schools is 54,555.

The corps was again depleted in June, and only twelve men were left to do school inspection. With ninety schools, spread all over the City, to cover, and daily visits to be made to each, the men were constantly hurried; still, active search for contagious diseases was kept up. When cases of scarlet fever or diphtheria were reported as having attended school, that school was given special attention until probable danger was passed.

Individual examinations were pushed to the limit of time of the inspectors, and persistent efforts were made, both with the principals and parents, to have remedied the physical defects found in these examinations.

Routine inspections were kept up during the year, through which were discovered thirty cases of true scarlet fever desquamation that had entirely escaped the teachers and would otherwise have remained in the school classes. These cases were promptly excluded, the buildings fumigated and the contact pupils kept under close observation for several days. This shows the necessity for a periodical, rapid but careful class room inspection of all school children, and it should be done at least three times yearly.

During the year twenty-six cases of tuberculosis were found among the pupils. These were mostly in the early stages and were referred to physicians and dispensaries. Efforts were made to have an open-air class established

for these cases, but lack of funds has so far made it impossible.

A thorough sanitary inspection of all school buildings was made in April and again in September, the nuisances found were reported to the Superintendent of Schools, and in most instances were promptly abated, and recommendations for improvements in a number of cases have been fully carried out.

All school buildings were measured and accurately described and a complete record of each has been transcribed on cards for that purpose and kept in this office.

Over seven thousand parochial school children have been vaccinated during the year, and at this time none are permitted to attend who cannot show evidence of successful vaccination.

There are no nurses employed in the parochial schools, but very vigilant care is exercised over each school by the Mother Superior, who acts as principal. Want of cleanliness and evidence of illness are promptly noted and referred to the inspector, and repeated and active efforts are made by the Mother Superior and the teachers in having the inspector's recommendations for treatment followed.

Respectfully submitted,

C. A. GROFF, M. D.,

Asst. Chief Medical Inspector.

Exclusions, 1912.

	February	March	April	May	June	September	October	November	December	Totals
Diphtheria	—	1	2	1	—	2	25	8	4	43
Diphtheria contact	—	—	—	1	—	—	27	1	5	34
Diphtheria suspect	—	—	1	—	—	—	—	—	—	1
Scarlet fever	3	1	1	10	4	5	5	13	19	61
Scarlet fever contact	—	1	—	3	—	—	—	4	5	13
Scarlet fever suspect	—	—	1	—	—	—	—	—	—	1
Measles	—	2	1	6	1	4	4	—	1	19
Varicella	3	1	14	16	3	2	29	11	11	90
Varicella contact	—	—	—	1	1	?	—	—	—	4
Pertussis	—	1	5	4	—	2	2	1	2	17
Mumps	4	2	40	44	4	—	11	14	3	122
Mumps contact	—	1	6	—	—	—	—	—	—	7
Mumps suspect	—	—	4	—	—	—	—	—	—	4
Pediculosis	34	24	15	50	7	3	12	14	5	164
Ringworm	5	7	10	12	3	3	3	4	—	47
Conjunctivitis	8	19	16	10	5	7	5	8	1	79
Scabies	6	2	11	7	2	2	4	8	11	53
Impetigo	3	22	7	10	3	2	21	8	4	80
Miscellaneous	4	—	—	—	—	—	—	—	—	4
Tonsillitis	2	3	9	6	3	2	17	11	1	54
Measles contact	—	—	—	1	1	1	3	1	1	8
Not vaccinated	4	13	9	26	—	—	2	3	—	57
Erythema	—	—	—	—	—	—	1	—	—	1
Trachoma	—	—	—	—	—	—	1	—	—	1
Indigestion	—	—	—	—	—	—	1	1	—	2
Papular eruption	—	—	—	—	1	—	—	—	—	1
										967

Recommended for Treatment.

	February	March	April	May	June	September	October	November	December	Totals
EAR										
Cerumen impacted	28	31	36	10	—	—	1	1	2	109
Defective hearing	52	82	37	83	14	2	26	27	15	338
Foreign body in eye	—	—	—	—	—	—	—	—	—	—
Otalgia	1	10	6	5	5	—	1	1	3	32
Otitis media, acute	15	12	14	21	2	7	14	16	6	107
Otitis media chronic	8	6	8	18	1	—	2	16	8	67
Otorrhoea	—	12	14	6	2	2	5	8	2	51
Tympanitis	—	—	—	—	—	—	1	1	1	3
NOSE										
Adenoids	101	145	94	226	29	27	185	118	54	979
Deflected septum	6	1	1	4	—	—	1	1	1	15
Epistaxis	1	—	1	—	1	—	1	2	1	7
Rhinitis, acute	1	5	11	8	3	—	27	25	56	136
Rhinitis, atrophic	1	6	—	1	—	4	1	3	—	16
Rhinitis, chronic	2	2	2	23	—	3	25	23	1	81
Nasal obstruction	92	47	42	72	5	1	51	38	16	364
Nasal catarrh	18	39	23	45	9	16	35	49	35	269
Nasal polyp.	1	—	—	—	—	—	—	—	—	1
THROAT										
Angina, simplex	—	4	14	9	3	—	3	—	—	33
Cleft palate	1	—	—	—	1	—	3	2	—	7
Hyper. tonsils	318	306	232	360	168	44	466	383	115	2,392
Laryngitis, acute	2	8	14	6	4	1	7	21	11	74
Pharyngitis, acute	2	32	7	16	16	7	56	184	89	409
Post pharyngeal catarrh	15	1	3	—	—	—	1	2	—	22
Tonsillitis, follic	—	12	18	31	11	4	48	62	82	268
EYE										
Blepharitis	74	86	51	95	35	29	84	60	46	560
Cataract	2	2	—	—	—	—	2	1	1	8
Chalazion	—	—	1	8	1	14	4	14	12	54

Recommended for Treatment—Continued.

	February	March	April	May	June	September	October	November	December	Totals
Conjunctivitis, acute	176	106	60	82	26	13	29	18	20	530
Conjunctivitis, phlyc.	—	—	1	1	—	—	—	—	—	2
Corneal opacity	—	—	—	2	—	—	1	3	1	7
Corneal ulcer	—	3	2	3	1	—	2	2	1	14
Dacryocystitis	—	2	—	—	—	—	2	—	—	4
Defective vision	1,205	1,125	573	970	153	64	651	402	224	5,367
Foreign body	2	3	6	13	3	8	5	3	4	47
Hordeolum	8	33	35	40	19	14	42	26	19	236
Keratitis	—	4	—	2	—	—	2	—	—	8
Nystagmus	—	1	—	1	—	—	2	—	—	4
Pterygium	—	—	—	2	—	—	—	1	—	3
Ptosis	—	—	1	—	—	—	—	—	—	1
Strabismus	20	28	18	86	14	16	50	29	10	271
Sub-conjunctival hem.	—	2	2	3	—	—	1	—	—	8
Macula of cornea	—	1	—	—	—	—	—	1	—	2
Leucoma	2	1	—	—	—	—	—	—	—	3
Obst. lach. duct	—	1	1	1	—	—	—	—	—	3
Oedema of eyelids	—	—	—	2	—	—	—	—	—	2
Trachoma	—	—	—	—	—	—	2	—	—	2
ORTHOPEDIC										
Coxalgia	—	1	—	4	—	—	4	2	2	13
Genu valgum	—	—	—	2	—	—	2	1	—	5
Kyphosis	—	2	—	1	—	—	1	—	—	4
Lordosis	6	4	2	5	—	—	2	—	—	19
Round shoulders	11	8	8	20	5	1	14	5	1	73
Scoliosis	7	3	—	4	2	—	1	1	—	18
Talipes equinus	2	—	—	—	—	—	—	1	—	3
Talipes varus	—	—	—	8	—	—	3	2	1	14
Flat chest	12	—	—	—	—	—	—	1	—	13
Ankylosis, knee	—	1	—	—	—	—	—	—	—	1

Recommended for Treatment—Continued.

	February	March	April	May	June	September	October	November	December	Totals
SKIN										
Acne	41	15	7	15	—	5	10	5	6	104
Alopecia	—	1	—	3	—	3	—	—	—	7
Dermatitis	—	8	4	14	4	1	3	2	1	37
Eczema	33	104	76	120	46	23	80	79	54	615
Furunculosis	10	18	13	28	13	8	19	20	16	145
Herpes	7	18	25	19	8	2	21	12	11	123
Impetigo	44	48	23	41	42	101	152	84	64	599
Onychia	1	2	—	2	—	—	—	—	—	5
Pediculosis	207	176	89	751	339	64	291	261	214	2,392
Psoriasis	—	—	—	1	—	—	1	—	1	3
Scabies	7	11	6	14	—	4	1	3	3	49
Seborrhoea	—	1	—	2	—	13	2	—	1	19
Tinea circinata	23	14	14	32	4	7	16	24	18	152
Miliaria	—	—	—	—	2	—	—	—	—	2
Urticaria	—	1	—	7	2	3	2	2	—	17
Veruccae	—	5	—	6	2	2	7	3	—	25
Comedo	5	—	—	—	—	—	1	—	—	6
Paronychia	—	—	—	—	—	—	—	—	1	1
MISCELLANEOUS										
Miscellaneous	1,568	—	—	—	—	—	—	—	—	1,568
Abscess	—	7	1	3	1	4	7	6	3	32
Abscess, alveolar	—	2	4	8	4	—	3	3	7	31
Adenitis	7	20	19	24	8	2	22	20	36	158
Adenitis, tubercular	—	—	1	1	—	—	—	—	1	3
Anaemia	4	8	4	13	1	3	16	7	3	59
Arthritis	—	—	—	1	—	—	—	—	—	1
Backward children	1	—	—	1	—	—	—	—	—	2
Bronchitis	—	18	1	20	9	4	32	45	38	167
Bursitis	—	—	—	1	1	—	1	2	—	5
Carious teeth	1,240	1,286	729	1,588	265	204	1,249	718	443	7,722
Chorea	—	8	8	7	1	1	3	3	1	32

Recommended for Treatment—Continued.

	February	March	April	May	June	September	October	November	December	Totals
Defective mentality	1	4	—	—	1	4	5	3	—	18
Defective speech	5	13	19	12	4	—	7	7	3	70
Enteritis	—	—	—	1	1	—	1	1	3	7
Enuresis	—	2	—	—	1	—	—	—	—	3
Epilepsy	—	3	—	—	—	—	—	1	—	4
Erythema	—	—	—	—	—	18	7	4	2	31
Ganglion	1	—	1	—	—	—	—	—	—	2
Gastritis	—	—	3	3	1	—	2	5	2	16
Headache and nausea	—	4	22	29	23	6	3	7	19	113
Mitral insufficiency	24	28	12	20	5	1	10	6	6	112
Indigestion	—	4	12	19	9	—	20	5	19	88
Infantile paralysis	2	—	1	1	—	—	—	—	5	9
Hep. ac. catarrhal	—	1	—	—	—	—	—	—	—	1
Malaria	—	—	—	—	—	—	—	—	—	—
Malnutrition	16	8	9	27	3	—	4	4	3	74
Malformation	—	—	—	—	—	—	1	—	—	1
Neuralgia	—	—	—	5	2	—	1	2	2	12
Neurasthemia	4	3	—	1	1	—	1	—	—	10
Nephritis	—	—	—	—	—	—	—	—	1	1
Osteomyelitis	—	—	—	1	—	—	1	—	—	2
Paraplegia	2	—	—	1	—	—	2	—	—	5
Rachitis	—	1	—	—	—	—	—	—	—	1
Re-vaccinations	15	261	375	102	—	—	1	—	—	754
Rheumatism	—	1	3	10	7	1	2	6	3	33
Stomatitis	—	—	1	1	—	1	—	—	1	4
Tongue-tie	—	—	—	2	—	—	7	—	—	9
Tuberculosis	—	4	1	9	3	—	7	2	—	26
Torticollis	—	2	—	6	1	—	—	3	1	13
Ulcer	1	—	4	3	1	—	—	—	—	9
Unclean	—	1	2	3	—	10	16	1	11	44
Goitre	1	2	1	—	—	—	1	—	—	5
Syncope	—	1	1	—	—	—	—	—	—	2

Recommended for Treatment—Continued.

	February	March	April	May	June	September	October	November	December	Totals
Chlorosis	—	—	1	—	—	—	—	—	—	1
Glossitis	—	—	—	2	1	1	—	—	—	4
Necrosis of bone	—	—	—	—	—	—	1	1	—	2
Colds	—	56	54	66	19	—	3	8	9	215
Pleurodynia	—	—	—	—	—	—	1	—	—	1
Cystitis	—	—	—	—	—	—	—	1	—	1
La Grippe	—	—	—	—	—	—	—	2	3	5
Synovitis	—	—	—	—	—	—	—	—	1	1
Asthma	—	—	—	—	—	—	—	—	1	1
Contracted tendon	—	—	—	—	1	—	—	—	—	1
Appendicitis, susp.	—	—	—	1	—	—	—	—	—	1
Influenza	—	2	—	—	—	1	2	—	—	5
Casualties										
Burns	—	1	1	2	2	—	3	1	—	10
Dislocations	—	—	—	1	—	—	—	—	—	1
Dog-bite	—	—	1	—	—	—	—	1	—	2
Cat-bite	—	—	1	—	—	—	—	—	—	1
Splinters	—	1	—	1	—	—	—	—	—	2
Fractures	1	—	1	1	—	—	2	2	1	8
Poisoning										
Ivy	—	—	—	10	16	1	2	2	—	31
Cocaine	—	—	—	—	—	—	—	—	—	—
Tobacco	—	1	—	—	—	—	2	—	—	3
Sprains	—	1	3	7	2	2	4	—	—	21
Wounds										
Contused	1	19	23	20	16	3	14	16	6	118
Gun-shot	—	—	—	—	—	—	—	—	1	1
Incised	—	1	—	2	1	—	2	5	1	12
Infected	5	53	33	45	12	4	14	9	15	190
Lacerated	—	9	6	11	5	—	1	2	2	36
Punctured	—	1	1	1	1	—	1	1	—	6
Abrasions	—	2	—	—	—	1	3	1	—	7

Parish Schools Fumigated During the Year of 1912.

February	3
March	1
April	4
May	10
June	4
September	9
October	6
November	26
December	15
	78

Summary of Work Performed by Medical Inspectors in Parochial Schools—1912.

	February	March	April	May	June	September	October	November	December	Totals
Number of visits to schools	1,544	1,521	1,237	1,851	1,032	646	1,630	1,558	1,254	12,273
Number of major contagious diseases found in routine examinations	10	7	62	79	11	15	103	52	50	389
Number of pupils excluded	76	99	147	214	38	37	173	110	73	967
Number of pupils instructed	5,469	4,439	2,954	5,447	1,424	785	3,959	2,964	1,885	29,326
Number of individual examinations	5,978	5,833	3,756	6,614	973	430	4,858	2,800	1,948	33,190
Number of vaccinations	1,433	1,157	999	516	158	1,656	893	169	56	7,037

Summary of Work Performed by Medical Inspectors in Parochial Schools, 1912.

Number of schools visited	90
Number of visits to schools	12,273
Number of major contagious diseases found in routine examinations	389
Number of pupils excluded	967
Number of pupils instructed	29,326
Number of individual examinations	33,190
Number of vaccinations	7,037

Treatment Received from Recommendations for the Year 1912.

Diseases	Recommendations	Treatments	Percentage
Ear	707	282	40
Nose	1,868	605	32½
Throat	3,205	1,503	47
Eye	7,136	2,983	41 4-5
Skin	4,301	2,214	51½
Orthopedic	163	44	27
Miscellaneous	10,743	9,874	92
Casualties	449	323	72

62 per cent. of recommendations received treatment.

Total number of children in parochial schools (year ending June, 1912)	54,555
Recommended for treatment:	
Carious teeth	7,722
(No nurse to bring children to City Hall.)	
Defective vision	5,367
(Eye-work in parochial schools stopped Nov. 10, 1912.)	

ANNUAL REPORT

OF THE

MUNICIPAL EYE DISPENSARY

FOR THE YEAR 1912

Philadelphia, December 31, 1912.

A. A. Cairns, M. D.,
Chief Medical Inspector, Bureau of Health, Philadelphia Pa.

Dear Sir:—I have the honor to submit the following report of the work done in the Division of Ophthalmology for the year ending December 31, 1912.

There were 6,560 visits made to this office, mostly school children, summarized as follows:

New cases	2,363
Refractions	2,173
Re-visits for post-cyclopegic examinations, verifications of prescriptions for glasses, treatment, etc.	2,024

There were 1,710 spectacles furnished free to children who were unable to otherwise procure them. Only 18 spectacles were replaced on account of loss or breakage.

Trachoma has practically been eliminated from our schools by excluding acute cases and keeping quiescent cases under constant observation. With 75 inspectors constantly on the alert only 17 cases were detected among school children, and all doubtful cases were included in the diagnosis. Six adult cases came under observation, making a total of 23 cases of trachoma.

The following diseased conditions of the eye were detected in children sent to this office for refraction and diagnosis and many visits were made to the homes of patients for diagnosis:

Blepharitis	14
Conjunctivitis	31
Conjunctivitis phlyctenular	6
Optic neuritis	6
Retinitis and choroiditis	6
Posterior staphyloma	3
Iritis	1
Posterior synechia	1
Corneal ulcer	1
Keratitis	1
Central corneal opacities	55
Strabismus	210
Nystagmus	13

Total number of children refracted 2,173, divided as follows:

Public school children refracted.....	1,474, or 68 per cent.
Parochial school children refracted..	699, or 32 per cent.

Of the total 2,173 children refracted 1,516, or 70+ per cent., were backward, as follows:

Out of 1,474 public school children refracted 1,020, or 70 per cent., were backward.

Out of 699 parochial school children refracted 496, or 71 per cent., were backward.

The average retardation of pupils in the parochial schools, due to defective vision, is about the same as those in the public schools, which tends to verify the fact that defective vision is the principal cause of retardation in all school children.

The following table shows the ages and grades of 7,319 children refracted under a mydriatic in this division in five years:

Eye Dispensary—City Hall.

Chart.

Grades.	Age of Pupils—Years											Total.	Above Normal Average Age.
	6	7	8	9	10	11	12	13	14	15	16		
8	.....	.....	.....	.....	.....	.....	1	11	20	9	6	47	15=32%
7	.....	.....	.....	.....	.....	1	20	39	28	11	3	102	42=41%
6	.....	.....	.....	.....	1	28	94	133	58	15	5	334	211=63%
5	.....	.....	.....	3	62	160	269	232	79	26	2	833	608=73%
4	.....	.....	4	70	255	336	380	288	91	19	3	1446	1117=76%
3	.....	9	135	311	417	402	327	203	64	29	1	1898	1443=76%
2	7	107	347	406	364	205	141	84	43	11	3	1718	1257=73%
1	178	245	201	125	80	43	31	20	11	1	6	941	518=55%
Total	185	361	687	915	1179	1175	1263	1010	394	121	29	7319	5211=72%
Above normal average age			201	531	861	986	1148	960	374	121	29	5211	
Per cent			29%	58%	73%	84%	91%	96%	95%	100%	100%	72%	

Figures on the broken lines indicated the position of the normal average school child.

There are many interesting features connected with this table that are worthy of study; out of 7,319 children with defective vision, 5,211, or 72 per cent., were backward in class, representing a collective or composite loss of 11,831 years, or a money loss of $414,085. Based on the actual cost of education, the loss to the children was considerably more.

As 90 per cent. of the children start to improve when they procure glasses, the economic advantages of a division of this kind are obvious.

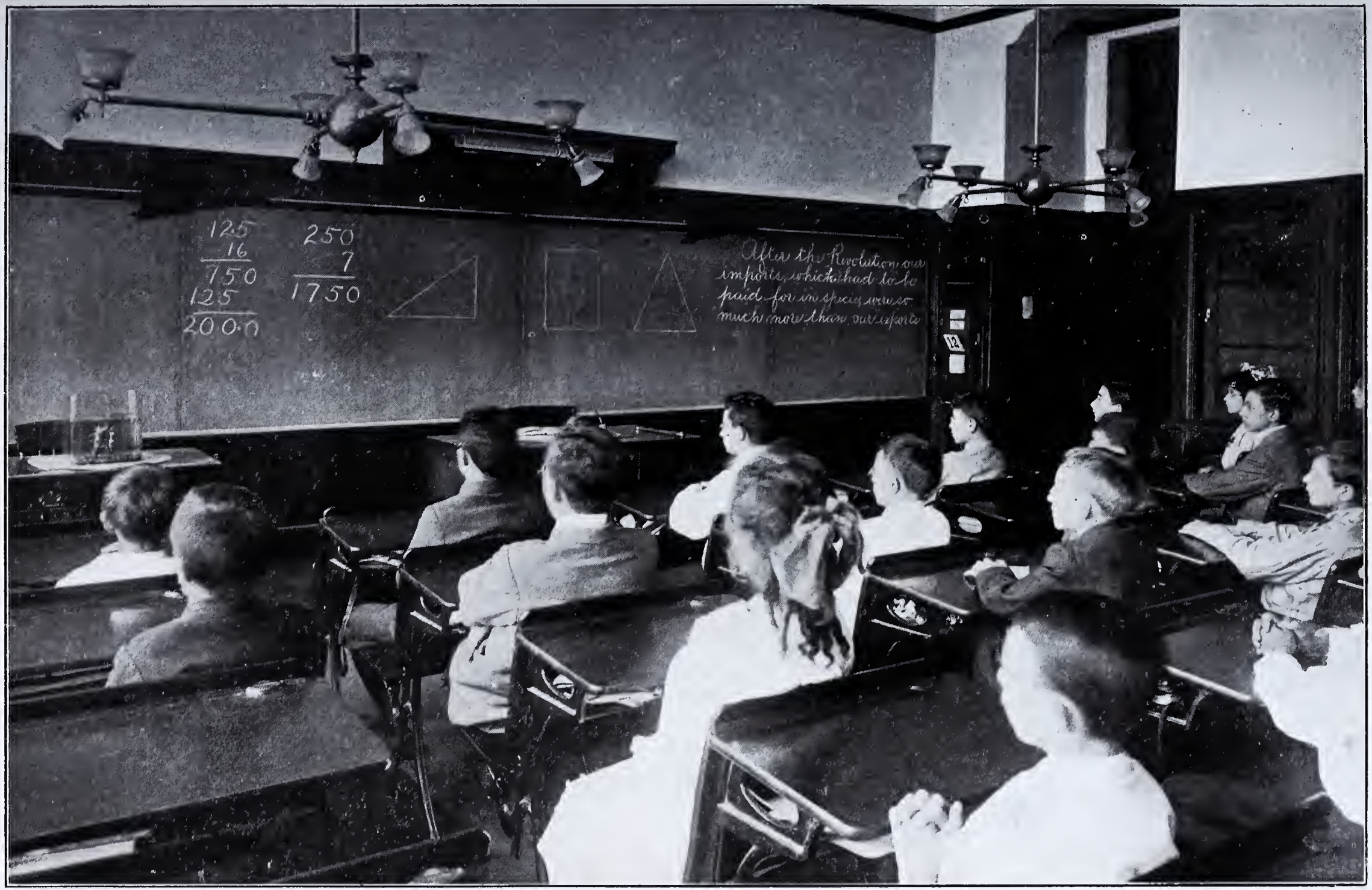
Only 1,649, or 22 per cent., were in the normal grade, and only 459, or 6 per cent., were above the normal grade. But few children remain in school after fourteen, the legal age at which children are permitted to work. This fact emphasizes the necessity of examining the eyes of children in the lower grades, especially kindergarten and first grade children. The above table shows only 483, or 6 per cent., of children above the fifth grade. Many children who left school at the working age might have left with a better education if their eyes had received attention when they were in the lower grades.

Our appropriation for glasses was exhausted about the middle of November. We are indebted to Dr. Brumbaugh for additional funds procured from the Board of Education. This enabled us to continue to furnish free glasses to the needy for the balance of the year.

The large amount of work done in the division was made possible by the able assistance rendered by the school nurses, who not only brought the children to the dispensary but prepared them for examination and did most of the clerical work required.

While the time lost from school by children having their eyes treated for defective vision is greatly counter-balanced by the benefit derived by the child, and to the teacher by the better showing in school work, at the same time

Astigmatism—Before Correction.



Astigmatism—After Correction.

we appreciate the fact that it is to the best interest of all concerned that as much time be saved as possible. Two or more visits could be saved if the optician would detail a man to come to this office at a certain hour to take measurements and fit glasses, and better fitting could be insured if the optician did his work under the observation of the ophthalmologist and every prescription could be verified, which is not the case under the present arrangement, as a large number of children fail to bring their glasses back for us to see.

The following are the diagnoses of 7,319 cases refracted under a mydriatic and in this division in five years:

Normal	164	
Hyperopia	2,109	= 30 %
Hyperopic astigmatism	71	= 1 %
Compound hyperopic astigmatism	2,732	= 38 %
Myopia	253	= 3.5%
Myopic astigmatism	15	= .2%
Compound myopic astigmatism	506	= 7 %
Mixed astigmatism	633	= 9 %
Anisometropia	833	= 11 %
Aphakia	3	

Respectfully submitted,

LEWIS C. WESSELS, M. D.,
Ophthalmologist.

ANNUAL REPORT

OF THE

DENTAL DISPENSARY

FOR THE YEAR 1912

Philadelphia, December 31, 1912.

MR. JOHN A. VOGLESON,
Chief of the Bureau of Health.

SIR:—January first, after fifteen months of effective volunteer service, the second year of the Dispensary began with the salaried corps of eight dentists, as provided by an ordinance of Councils. Subsequently these eight provisional incumbents successfully passed the Civil Service examination and their appointments were made permanent. The Chairman of the Volunteer Committee served by suffrage as Acting Chief.

With authority thus vested opportunity was offered to institute a system of technique tending to uniformity in standards and increased efficiency, resulting in an extension of the scope of service heretofore not deemed practical for public dental service.

An exceptional opportunity for conference was afforded by the meeting of the Fifteenth International Congress on Hygiene and Demography, held in Washington, D. C., September 23rd to 28th, and your Chairman is pleased to report having provided an exhibit and taken part in the deliberations of the Congress.

Our exhibit consisted of imported charts, displayed to invite criticism as to the merits of this method for instruction in public schools; data anent the development of our oral hygiene movement, records of examinations made in schools, scope of service and number of operations performed in our City Hall Office and Southwark School Branch. Smears of mouth bacteria focused under microscopes was a part of our display, the slides being furnished by courtesy of Dr. R. C. Rosenberger of the Philadelphia General Hospital.

At this meeting about five hundred sets of our charts, essays and printed forms were distributed on request.

A photograph of our exhibit was made for record.

This was the first meeting of the Congress providing a division on mouth hygiene. This division of the exhibits was awarded a diploma.

During the year foreign and local health officers in person approved our work, special interest being shown in the appropriateness of the Director's ruling that only children in the elementary schools be treated. When explained that the highest grade in the elementary school is the time at which the control by law of the education of the child ends, visitors have noted for proposed legislation, in adjoining States, that this is a reason for limiting by law public dental service to this age.

On these occasions opportunity is taken to explain that during the elementary school age susceptibility to dental caries is greatest, and therefore early service means most to the child.

Report in detail of the number and character of operations performed appears on the appended forms.

On December 30th Councils honored the dental item in the Department budget providing for branch dispensaries in the Thomas May Peirce and William B. Hanna Schools, and for four additional assistant dentists. This

appropriation also provides, as new, a salary of $2,500 for a Chief of the Dispensary service.

Active support by the School Board has been most gratifying, this body providing washstands, fountain spittoon connections, and power for our electrical equipment.

On December 10, 1912, there was held a celebration dedicating the Dispensary in the Peirce School, attended by about 1,600 children and parents. Representatives of the School Board, the Division of School Superintendents and the Department of Health addressed the meeting.

This meeting constituted a formal acknowledgment of the gift of a dental chair, with its equipment, from the family of the late Thomas May Peirce.

Respectfully submitted,

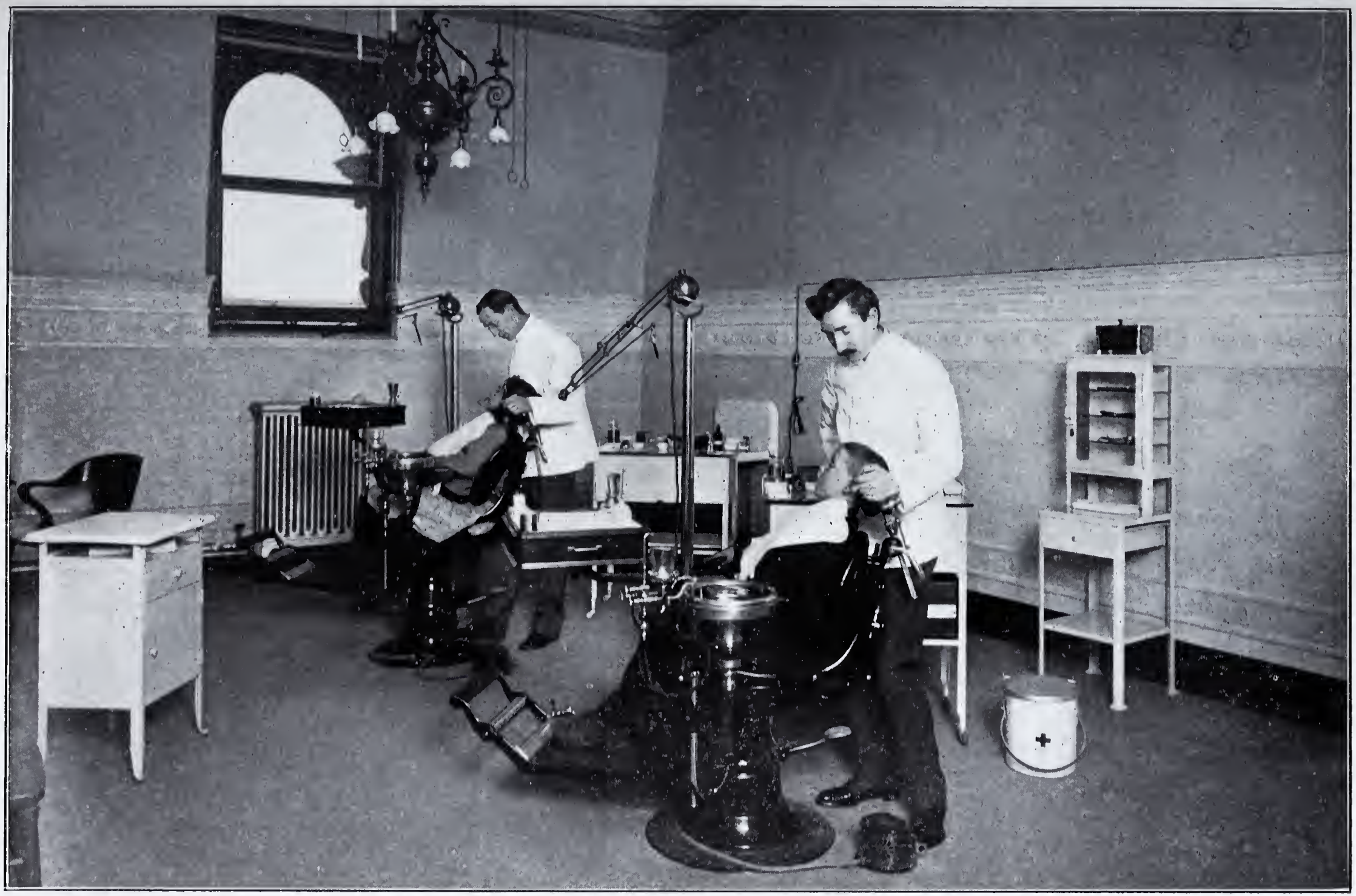
P. B. McCULLOUGH, D. D. S.,
Chairman.

Committee in charge:

CHAS. B. SCHUPACK, D. D. S.,
LUTHER M. WEAVER, D. D. S.

Advisory member:

EDWARD C. KIRK, D. D. S.



Dental Dispensary—City Hall.

Dental Dispensary—Southwark School.

Month	Daily number of patients	Fillings				Canals		Pulps				Grd. A. G. N. O. 3	Pericementitis	Al-abscess	Gingivitis	Stomatitis	Cleansing	Extractions	Miscellaneous	Examinations
		Amalgam	Gutta percha	Cement	Copper cement	Dressed	Filled	Pulpitis	Capped	Devitalized	Extracted									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	M	
January	412	252	67	32	15	42	4	78	7	1	9	64	—	—	—	—	30	141	—	9
February	532	305	59	54	53	61	5	83	11	9	4	167	2	4	—	1	57	136	27	182
March	708	411	64	43	65	22	4	99	32	6	3	219	2	—	—	4	79	270	14	263
April	724	678	32	43	54	18	6	110	23	—	8	231	1	2	1	4	134	209	137	258
May	951	959	54	54	25	35	3	131	42	—	16	204	4	1	—	2	95	314	331	354
June	703	713	34	61	22	30	2	116	14	1	22	126	7	—	—	1	121	303	205	230
July	500	361	57	65	17	37	—	118	16	6	16	118	6	1	—	—	121	190	201	158
August	360	335	53	38	17	36	5	96	20	2	3	61	5	2	—	—	77	86	147	93
September	618	620	40	64	13	40	3	106	32	—	21	103	10	2	—	—	89	316	327	276
October	752	749	62	90	33	55	5	171	25	2	11	163	—	—	—	—	155	338	427	319
November	731	683	77	81	17	65	8	138	22	—	15	75	1	4	—	—	113	365	324	282
December	739	670	90	84	25	46	12	156	21	—	16	80	3	1	—	—	121	357	421	271
Totals	7,730	6,736	689	709	366	487	57	1,402	265	27	144	1,611	41	17	1	12	1,192	3,016	2,561	2,695

Southwark School Branch.

Month	Daily number of patients	Filling				Canals		Pulps				Grd. A. G. N. O. 3	Pericementitis	Al-abscess	Gingivitis	Stomatitis	Cleansing	Extractions	Miscellaneous	Examinations
		Amalgam	Gutta percha	Cement	Copper cement	Dressed	Filled	Pulpitis	Capped	Devitalized	Extracted									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	M	
January	93	13	2	7	2	—	1	3	5	—	1	24	—	1	1	2	2	47	—	43
February	84	44	1	1	3	12	1	8	—	3	3	4	—	1	5	—	5	34	—	27
March	166	145	11	—	5	16	—	44	9	—	8	59	10	6	—	2	28	65	—	84
April	221	121	17	9	3	10	3	91	16	—	—	104	25	3	—	—	37	32	23	98
May	383	174	45	25	14	16	3	142	35	3	1	121	30	7	—	1	51	68	34	136
June	288	129	30	21	9	13	—	97	15	7	—	28	17	1	—	—	44	55	80	107
July	4	2	1	—	—	—	—	2	—	—	—	4	—	—	—	—	2	2	—	—
August	Closed		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
September	106	72	5	12	—	14	—	28	10	—	—	15	6	1	—	—	23	20	61	50
October	362	156	29	14	17	31	2	125	18	5	—	25	24	8	—	—	62	65	119	108
November	330	104	5	27	12	29	6	147	15	10	1	9	12	7	—	—	44	45	70	84
December	315	107	33	12	9	14	—	100	11	10	4	17	11	7	—	—	27	93	21	83
Totals	2,352	1,067	179	128	74	155	16	787	134	38	18	410	135	42	6	5	325	526	408	820

Number of regulating cases since January 1, 1912—10.

Number of abscesses treated (discharging outside face)—6.

City Hall Office.

Total number of patients	7,730
Total number of fillings	8,500
Total number of extractions	3,016
Total number of other operations	7,817
Total number of examinations	2,695
Total number of discharges	1,832
Average daily number patients treated	25.8

Southwark School Branch.

Total number of patients	2,352
Total number of fillings	1,448
Total number of extractions	526
Total number of other operations	2,479
Total number of examinations	820
Total number of discharges	451
Average daily number patients treated	9.8
	39,666

ANNUAL REPORT

OF THE

DIVISION OF MEDICAL INSPECTION

OF

PUBLIC SCHOOLS

FOR THE YEAR 1912

Philadelphia, December 31, 1912.

MR. JOHN A. VOGLESON,
Chief, Bureau of Health.

SIR:—Herewith is submitted the first annual report of the Division of Medical Inspection of Public Schools, performed in pursuance of the provisions of the School Code. (Pennsylvania Act of Assembly, May 18, 1911.)

Respectfully,

WALTER S. CORNELL, M. D.,
Director of Medical Inspection of Public Schools.

I. General Considerations—General Summaries.

II. Professional Training of School Inspectors.

III. Assignments and Visits of Supervisors and Inspectors.

IV. Keeping of Records—Stationery and Equipment.

V. Incidental Cases (Children Sent to Inspectors by Principals)—Physical Defects, Contagious Diseases, Vaccination Certificates, Accident Cases.

VI. Handling of Contagious Diseases.

VII. Rapid Class Room Examinations—Inquiries as to Correction of Defects.

VIII. Routine Physical Examinations—Principal Defects Looked For.

IX. Physical Defects Recommended for Treatment (Statistics).

X. Proportion of Physical Defects Corrected—Special Study, three months.

XI. Exclusion from School Because of Reportable Contagious Diseases.

XII. Exclusions from School for Minor Contagious Diseases and Other Causes.

XIII. Loss of School Time Because of Minor Contagious Diseases Avoided by the Work of the School Nurses.

XIV. Throat Cultures.

XV. Vaccinations.

XVI. Disinfection of School Buildings—Cleansing of School Buildings.

XVII. Sanitary Inspection of School Buildings and Sanitary Defects Reported to the Board of Education.

XVIII. Clinic for Mentally Deficient Children.

XIX. Special Open Air Classes (Including Provision for Tubercular and Poorly Nourished Children).

XX. Children Visited at Their Homes at the Request of the Bureau of Compulsory Education.

XXI. Physical Examinations of Applicants for the Position of School Janitor.

XXII. Special Examinations of High School Pupils Competing in Athletic Sports.

XXIII. Certifications to the Board of Education (On Account of Salaries of Teachers Excluded from School).

XXIV. Exhibits on Medical Inspection.

XXV. Additional Volunteer Work by Medical Inspectors.

XXVI. Special Investigations.

A. Economic (see X, Proportion of Defects Corrected, and XIII, Exclusion Time Saved by Nurses).

B. Clinical (see VI, Handling of Epidemics and also XIX, Special Open Air Classes, as well as Studies Here Following).

XXVII. School Nurses: Summary of Work.

I. General Considerations.

General Summaries.

The report herewith submitted covers only the period January 19 to December 31, 1912, owing to the reorganization of the Division of Medical Inspection of Public Schools on the former date, under the provisions of the School Code of Pennsylvania.

Preliminary instructions of the corps and certain changes in its personnel, due to the Civil Service examinations, prevented the institution and operation of routine procedure until March 1st. For this reason the statistical figures relating to visits to schools, children examined, physical defects recommended for treatment and contagious diseases discovered, represents the work of four-fifths rather than of the entire year. Because the various minor activities included in this report were projected and instituted at various times during the past year, they also represent in amount only fractions of a full year's work.

While the figures submitted in this section give a fair idea of the work from the standpoint of public service, and the details given in the following sections show more exactly the methods and scope of medical inspection, this report necessarily cannot describe what must be the most important phase of the work in any newly-created organization, namely, the establishment of working relations with the other official bodies with which it comes in contact. The provisions of the School Code of Pennsylvania which relate to cities of the first class are peculiar to this State, and this fact, together with the considerable number of Bureaus and Divisions in the Municipality and Board of Education which come into relation with this Office, has made co-operation very necessary to correlation. This Division has come into relation with the Division of Con-

tagious Diseases, the Bacteriological Laboratory, the Division of Sanitation, the Municipal Eye Dispensary and the three Municipal Dental Dispensaries under the Bureau of Health. In the Board of Education it has come into relation principally with the Superintendent of Schools and the teachers of the City, the Secretary of the Board of Education and the Superintendent of Buildings. Fortunately, a desire on the part of all the officials mentioned to make the work of medical inspection of schools a success has resulted in the formulation of methods of procedure generally satisfactory.

In this connection three problems have been solved which heretofore had baffled the health and school authorities of the City. The first of these was the reporting of all contagious diseases to the Bureau of Health without undue loss of time to the school child through official exclusion. The second was the vaccination of all school children without undue inconvenience to inspectors, parents or school principals. The third was the clear demarcation in the minds of the school authorities between the work of the inspectors of schools and the operations of the Division of Contagious Diseases of the Bureau of Health. See respectively Sections VI, XV and VI.

Throughout the year the Director of this division has benefited by the counsel and hearty co-operation of the Associate Superintendent of Schools, who was appointed by the Superintendent of Schools to look after the matter of medical inspection from the standpoint of the school authorities. Through his knowledge of the best modes of procedure and ability to secure prompt co-operation from the District Superintendent and principals, the work of the division has constantly increased in scope, with a general spirit of harmony.

The work of medical inspection consists of three major activities:

(1) The correction of physical defects existing in school children.

(2) Detection of cases of contagious disease existing in school children.

(3) Preservation of hygienic conditions in the school houses.

In addition to these the work in Philadelphia has come to include ten minor groups of activities, some of which necessarily hinge on the three already mentioned:

Free vaccination of pupils by inspectors on application by parent.

Expert examination of children suspected of mental deficiency.

The placement of poorly nourished children in special open-air classes.

Visits to absentee children at their homes in behalf of the Bureau of Compulsory Education.

Examination of applicants for position of school janitor.

The institution of special medical inspection in the higher schools.

Certification of exclusion and re-admission of teachers by the Bureau of Health to the Board of Education on request of the Superintendent of Schools.

Special investigations concerning the spread of contagious diseases.

Special studies on the best method of assignment of school nurses.

Special physical examinations of high school students intending to compete in athletic sports.

With the next year several other activities may be taken up, notably the more expert medical examination of mentally deficient children, and the more accurate investigation of conditions of ventilation and illumination in the school houses.

General Summary.

Number of pupils in elementary schools	175,905
Number of pupils in high schools	11,502
(Medical inspection in high schools instituted in latter part of year only.)	
Number of school buildings	280
(Main building with annex on same lot classified as one school.)	
Visits made by supervisors	1,355
(April 1 to December 31.)	
Visits made by assistant inspectors	35,556
Pupils sent to inspectors by teachers	98,171
Routine physical examinations	111,854
Special examinations	317,564
(Rapid examinations, mostly by classes.)	
Total number of physical defects recommended for treatment	142,536
Proportion of physical defects corrected consequent to recommendations	.45
Number of exclusions from school	7,046
Time lost from school by reason of exclusions (in days)	4,314
(Minor contagious diseases only.)	
Number of throat cultures taken	2,722
With positive results	418
Vaccinations performed	2,312
Number of schools disinfected	335
Number of sanitary defects reported to Board of Education	250
Children seen at special clinic for mentally deficient children	188
Children placed in open air classes	129
Children visited at their homes at request of Bureau of Compulsory Education	150
School janitors (applicants physically examined)	32
High school students (competitors in athletic games specially examined)	95
Certification to Board of Education concerning exclusions by Bureau of Health of school teachers	12

Public Exhibits.

Special work done by assistant medical inspectors.
Special investigations concerning contagious diseases, sanitation, etc.

II. Professional Training of School Inspectors.

An earnest endeavor has been made during the first year of the present school corps to train the school inspectors in the subjects of contagious diseases, physical defects of children, personal hygiene and sanitation. The Civil Service examination through which the inspectors were appointed revealed the fact that many physicians of undoubted standing and fine general qualifications failed to qualify because of ignorance in these subjects. Since the practice of medicine is an art in which the practitioner perfects himself in those things which are useful to him in his daily work, this, after all, was not so remarkable as at first appeared. The inspectors therefore were given a course of lectures in Child Hygiene by the Director of the division, these lectures being held at the University of Pennsylvania, and being already listed as part of the post-graduate medical course in hygiene under Professor A. C. Abbott.

The members of the corps also visited the Philadelphia Hospital for Contagious Diseases, each inspector visiting the scarlet fever wards on one day and the diphtheria wards on another day. Since it is just as essential that the inspectors be conversant with the less dangerous diseases—chicken-pox, mumps and measles—arrangements are now being made to have the corps visit the Philadelphia General Hospital for observation in its wards.

Because the Clinic for Mentally Deficient Children at the Bureau of Compulsory Education has become too large for the Director of the Division to handle unaided, and because the establishment of many special classes through-

out the City requires medical experts who are convenient of access, ten of the inspectors were asked to work at the House of Detention for several days, being instructed by Miss Helen Hill, Psychologist, in the use of the Binet mental tests. The relationship between race, color, nativity, truancy and physical health, and the grade of mental development, was also studied in a series of four hundred cases.

In addition to this centralized instruction, the five supervisors have at all times been of assistance to the inspectors concerning the best methods of examining children, the technique of vaccination and the keeping of careful records. Such advice and instruction has been regularly given before the introduction of any new plan, and in the case of beginning epidemics in schools where a thorough inspection of every child was deemed necessary in order to stamp out the disease, the supervisors as a rule have met the assistant inspectors, so that doubtful cases could be better settled after a conference.

This system of checking up the inspectors' work through the supervisors, not only in the case of contagious diseases and physical defects, but in the case of sanitary defects, reports to the Central Office, etc., has resulted in a professional work singularly free from complaints from any source on the ground of bias or professional inability.

III. Assignments and Visits of Supervisors and Inspectors.

The City of Philadelphia is divided into ten school districts, under the Board of Education. Each of the five medical supervisors covers two school districts, and therefore comes into relation with two district superintendents, 50 principals and about 38,000 children. Each supervisor maintains headquarters at a certain school, at

which school the central office or the medical inspectors of his district may reach him by telephone every morning between nine and ten o'clock. Incidentally the supervisor looks after the health of this school, thereby effecting a slight saving of time in the detail work and keeping himself well informed from practical experience of the various activities performed by the inspectors. Each supervisor renders a weekly report, giving the number of schools visited each day and a special report upon the work of two inspectors. This report covers the inspectors' maintenance of schedule, professional ability, accuracy, legibility of reports and general ability. With twelve inspectors in each supervisor's district a report on every man is rendered every six weeks. The supervisors are held responsible for the excellence of the work of the inspectors, and an endeavor is made on the part of the office to promote this understanding throughout the corps. It is the policy of the Central Office not to interfere with the detail work in the districts as long as this is running smoothly.

The inspectors visit the schools on schedules varying from once daily to weekly. Most of the schools are visited daily, but in the outlying districts two visits a week is all that is necessary or feasible. A few isolated one-room schools in the farming section along the Bucks County boundary are visited once a week only. The necessity under the School Code of physically examining every child annually caused the experiment in the Eighth and Ninth Districts under Dr. Moxey of a reduced schedule, so that more time could be given to physical examination and less to journeys on the street between school buildings. This was really necessary, as the number of physical examinations made was not up to the requirements of the law. Dr. Moxey's districts, which embrace Germantown, Chestnut Hill and other residential and suburban sections,

were chosen because of the minimum of contagious diseases there and the comparatively long distances between the school houses. The interesting result of the first month of this experiment was an increase from 2,500 routine examinations to 6,000 examinations, with no increase in the number of contagious diseases. This result was attained only by placing a considerable mental strain on the supervisor, who, with the inspectors, was compelled to be particularly vigilant and was, besides, handicapped with the handling of an epidemic of scarlet fever which occurred at the Sheridan School. It is the belief of the Director of the division that visits on alternate days to the schools in the better parts of the City may well be instituted, as the school principals under the reduced schedule are supplied with all necessary information, so that an inspector may be brought to the school any time that he is required.

During the year 1912, more accurately after April 1st, at which time the supervisors were appointed, the supervisors made 1,355 visits to the schools. During the year 1912 (actually February 1st to December 31st) 35,556 visits were made to schools by inspectors. The following table gives the statistics on this subject in detail:

Visits required by regular schedule	35,426
Visits made on regular schedule	34,906
Visits omitted from regular schedule, by reason of special assignments, vacancies in the corps, and illness	520
Extra visits made by inspectors, emergencies, special investigations and post-graduate work	650

IV. Keeping of Records.

Stationery and Equipment.

The records of contagious diseases found are kept on journal sheets, distinguished from the journal sheets used for the records of physical defects by reason of their yellow color.

The physical condition of every child is noted on the back of its registration card, where a special form is filled out. The one in use in Philadelphia is an ancient one, not particularly good, and therefore not here shown. It will be improved during the coming year.

A record of physical defects and defective children, really a journal of the defects found, is kept in each school, such record being in the medical inspector's drawer and accessible to the school principal. These record sheets each carry the names of about 20 children, and 138,000 entries were made by the inspectors last year.

Follow-up sheets on which record is made of children suffering with severe physical defects, which physical defects have not been corrected after three endeavors on the part of the inspectors, constitute the third of the journal forms. This sheet is pink in color in order that it may be readily distinguished.

Weekly reports are rendered by the inspectors. The work report and the time report are kept on separate forms. The work report contains, among other items, a list of the most frequent contagious diseases and the most frequent physical defects in order to standardize the work of recording these. This same process of standardization is furthered by the use of daily memorandum blanks by the inspector, such blanks having printed upon them a list of the physical defects most frequently encountered. In this way the use of four or five synonymous terms for one disease is avoided, and the work of summarization at the Central Office is facilitated.

Parents' notices are of several kinds, a general one usable for any physical defect, one for eye-strain, one for squint, one for nasal obstruction, one for decayed teeth and one for contagious diseases. The form for contagious diseases, while specially designed to meet the requirements of work in a large city with different corps of inspectors

in a large Bureau of Health, is very satisfactory. It may be used for minor contagious diseases, such as pediculosis, in which the physician may be consulted, or for suspicious cases not diagnosable on the first day of examination, and for cases of reportable contagious disease in which the Division of Contagious Diseases is notified to take charge of the case.

Regarding their equipment, a vision-testing card with Snellen's type, wooden tongue depressors, and alcohol, gauze and cotton used for vaccinating, constitute the material kept on hand by the medical inspectors. The school nurses are provided with all necessary minor surgical dressings—cotton, bandages and adhesive plaster, three or four official unguents, antiseptic solutions and tincture of green soap.

V. Incidental Cases.

Numerous children are noticed by teachers to be suffering with headaches, acute general illness, a skin rash suggestive of some contagious disease, are victims of accidents or newly admitted without certification of the vaccination mark.

The proportion of physical defects found by the inspectors in these incidental cases compared to the physical defects found during the routine examinations cannot be given, since the inspectors' records make no distinction. The fact, however, that 98,171 children were sent to the inspectors on the initiative of the teachers, an average of three per visit, shows the appreciation of the teachers of the presence of the inspectors and the value of frequent visits to the schools. Initiative on the part of the teacher is encouraged by a printed circular describing the most frequent defects and urging co-operation with the medical inspector. A blank form (the only one re-

quired of the teacher in the entire work of medical inspection) is used for mutual information.

In the case of accidents the inspectors follow the same procedure that they would if meeting an accident case in any public place—namely, to give first aid and then refer the case to the family physician, or, if the child is in destitute circumstances, to a hospital dispensary. By so doing help is given, but legal responsibility for outcome of the case is not incurred. Experience has shown that many persons perfectly willing to accept medical services without charge are very quick to consider a lawsuit if the outcome of the case be unfavorable. In such cases the ground would be taken that the medical treatment was forced upon the child without the parents' knowledge and consent.

The matter of handling contagious cases and of preventing epidemics from contagious diseases is mentioned in the next section.

VI. Handling of Contagious Diseases and the Prevention of Epidemics.

The contagious diseases encountered by the inspectors fall into two groups—those reportable to the Bureau of Health and those of minor importance.

Those of the first group are scarlet fever, diphtheria, measles, German measles, chicken-pox, whooping cough and mumps, and also, less frequently, tuberculosis, trachoma and other diseases.

In the second group are principally the parasitic skin diseases, pediculosis, ringworm, scabies and favus.

Reportable contagious diseases have in the past frequently caused exclusion of children for periods longer than those contemplated by the law. This was due to a number of causes, the principal of which were tardy rec-

ognition by the parent of serious sickness in the child, delay by the attending physician in reporting the case, time consumed by notifications in the mails and transcriptions in the Health Office, and in cases where no physician was called to attend the child delay due to general ignorance on the part of both the Health and School authorities of the cause of the child's absence. The institution, early in 1912, by the Division of Contagious Diseases of a strict interpretation of the law with consequent exclusion of children for the full legal period beginning with the date of notification of the Bureau of Health, developed a situation which absolutely required solution, and fortunately produced a very simple and logical one. The Bureau of Health, on the one hand, continued to call procrastinating physicians to task, and the Board of Education, on the other hand, undertook to include in its work a specific inquiry as to contagious disease in the case of absentee children away from school without a known lawful excuse. The Bureau of Compulsory Education furthermore voluntarily undertook to investigate small school children, six to eight years of age, who ordinarily do not come under their province, if requests for investigation were made by the Office of this Division. In order to emphasize to parents the necessity of speedy reporting and indirectly to bring procrastinating physicians to account at their source of income, two hundred thousand notices were printed and issued in the schools, every parent thus being specifically notified. It is the intention of the division to issue these notices twice a year. A specimen notice is here shown.

TO THE PARENTS OF SCHOOL CHILDREN

ALL CASES OF

CHICKEN-POX SCARLET FEVER GERMAN MEASLES
MUMPS MEASLES WHOOPING COUGH
DIPHTHERIA

should be reported *at once* to the *Bureau of Health.*

IF SUCH NOTICE IS DELAYED, YOUR CHILDREN ARE KEPT OUT OF SCHOOL LONGER THAN IS OTHERWISE NECESSARY

See that your doctor reports the case to the Bureau of Health at once.

If you have no doctor, report the case yourself at once to the Bureau of Health, City Hall; or to the Principal of the School, who will notify the Bureau of Health for you.

This refers to any case in your family, whether it be an infant, a school child, or an adult.

DR. JOSEPH S. NEFF,
Director of Public Health and Charities.

It was found necessary to systematically inform the school principals of the separation of the medical inspection work into two divisions, one handling contagious diseases throughout the City, and the other the inspection of public schools, because of the operation of the new School Code of Pennsylvania. The first three or four months of the year 1912 considerable misapprehension and sometimes irritation existed in the minds of school principals because of the lack of a realization of the mutual independence of the two Divisions. Each Division received many calls relating to the work of the other. The latter part of the year, however, was marked by a clear realization on the part of the school principals of the function of each Division, and consequently by the transaction of business with dispatch and harmonious understanding.

Effort has been made to impress upon the teachers that sore throat and skin rash are the cardinal danger signs

in a child. By reason of this knowledge a great many cases of contagious disease have been referred by the teachers to the inspectors, as well as many others who are referred simply because the child complained to the teacher of acute general illness. Experimentally the month of September was devoted largely to a rapid inspection of the whole school population, the object being to detect any signs of contagious diseases from which the children have been suffering during the late summer and also to detect physical defects which should be remedied without delay. Experience has shown that this plan was not a success. Neither the physical defects detected nor the cases of contagious diseases found justified the expense which, estimated from the budget of the division, is about $4,000 per month.

The general rules of procedure in connection with reportable contagious diseases may be set down somewhat as follows: If a case of diphtheria or scarlet fever is found actually sick in a class room, the class is dismissed at once and in the afternoon the whole school is dismissed and the building disinfected. In this connection economy of school time is effected if the case is discovered on a Thursday or a Friday by dismissing the one class affected until the following Monday, but postponing the disinfection of the school building until Saturday.

If a case of diphtheria is found in a school the Office sends to the school sufficient culture tubes to take cultures from the throats of all the children in the class, and the children are held until this is done by the inspector. In the case of either scarlet fever or diphtheria every child in the class is examined and the history of antecedent illness in the last three weeks with an accompanying sore throat is sought. The Division of Contagious Disease investigates the home, the Sunday School and the milk supply routinely.

Diphtheria, during 1912, was epidemic in one school only. This was the Finletter, in the Kensington district, where some eight cases of the disease developed in the course of three months. At the Pierce School, Twenty-fourth and Christian streets, a sudden appearance of the disease furnished four or five cases in the course of one week, but with no subsequent cases. The disease at the Finletter School was checked only by the culturing of the entire school with the consequent exclusion of 120 children showing positive throat cultures, and four disinfections of the school building.

In the case of scarlet fever, epidemics have occurred at the Thomas May Peirce School, Heston, Childs, Sheridan, Sheppard and Glenwood Schools, the Thomas May Peirce and the Heston School furnishing obstinate epidemics totalling 18 cases each, while 12 cases occurred at the Childs School. There was no doubt in each of these cases that the school was the focus of infection, since a carefully plotted map here shown for the Thomas May Peirce and the Childs Schools revealed the fact that neighboring schools were not infected at all. In the case of the Sheridan and the Sheppard Schools an epidemic occurred in December coincident with an increase of scarlet fever, not only throughout the City, but, according to municipal reports, in many other cities of the United States. These cases, while desquamating, were found in class rooms, and though they had probably helped to spread the disease, the entire blame for the epidemic could not be placed on the school.

In the handling of these epidemics of scarlet fever, and on several other occasions where two cases of scarlet fever in a week in children attending the same school caused some apprehension, the rule was instituted that every teacher question her class in a search for children

who had been sick within the preceding month with a sore throat or a skin rash or who possessed brothers or sisters showing such signs, and also that every child previously absent from school be held outside the class room until questioned and passed upon by the medical inspector. During such periods the medical inspector was instructed to visit this school at 9 o'clock each morning and inspect at once the absentee children so that they might be returned to their class rooms and thus no delay to the school work would result from the extra medical inspection.

During the latter part of the year measles was prevalent in the northern part of the City, but it must be confessed that we have not yet found the means to check this disease. In most instances there is a neighborhood infection, in which the disease, extremely contagious for a short period, is transmitted by children from one to the other while at ordinary play. The number of measles cases reported as actually found in school by inspectors did not equal the number of diphtheria and scarlet fever cases, although the total number of children ill with measles during the course of the year was many times that of the children suffering with scarlet fever or diphtheria.

The measures instituted for the control of diphtheria and scarlet fever, embracing as they do the inspection of throats, the taking of throat cultures, the examination of hands for desquamation, inquiries as to previous sickness, careful questioning of previously absent children, scrubbing of school rooms and the disinfection of entire school buildings, have reduced the incidence of these diseases far below the figures of a few years ago. This is principally true of diphtheria. In the case of scarlet fever, while the division was handicapped by a wide-spread prevalence of mild cases in November and December, a marked reduction in the death rate has occurred.

The Director of the division wishes to remark especially in connection with this matter the splendid co-operation of Dr. John P. Garber, Associate Superintendent of Schools, who has promptly acted in the matter of school dismissals and disinfections in accordance with the medical judgment of the Division of Medical Inspection in every case. As a consequence the work has been prosecuted with no friction from any source, but rather a remarkable spirit of co-operation on the part of the principals of the schools.

VII. Rapid Class-Room Examinations.

Inquiries as to Correction of Defects.

On certain occasions, in certain schools, rapid class-room examinations have been necessary as a part of the work of medical inspection. At the beginning of the year all the children entering the first grade are examined for the existence of a vaccination mark; if a child actually sick with scarlet fever or diphtheria is found in a class room, the other children of the class are carefully inspected; if three or more cases of scarlet fever or diphtheria occur in a school in the course of three weeks, the whole school is similarly carefully inspected; if there is evidence of a beginning epidemic of chicken-pox, measles, mumps or whooping-cough, the class room, or, if necessary, the whole school is inspected. In certain parts of the City class-room inspections among the girls for pediculosis were necessary by the inspectors as well as by the nurses.

The number of such throats, hands and arms inspected in the course of a year in a large city comprises such a considerable item that it is well worth noting, even though the individual inspections consume but a few seconds each. The reports of the inspectors showed 317,564 such inspections.

The number of children interviewed in the course of inquiries as to the correction of defects is not included in the figures just given.

Inquiries as to the Correction of Physical Defects.

The plan of medical inspection necessarily takes strongly into account the securing of results, and it is evident that the personal solicitation of the nurses rather than the simply written memorandum issued by the inspector, and repeated inquiries rather than single inquiries, are factors producing results, just as they do in all lines of business activity.

Regarding the latter, provision was made on the blank forms containing the records of physical defects and physically defective children for three inquiries concerning the correction of each defect, assuming that such defects were not always corrected before the first inquiry is made. By this follow-up system, a great many cases were treated which otherwise would have failed of treatment, the parents rightly reasoning that anything so tenaciously pursued by the medical inspectors must be of some importance.

Finally, in order that no case of serious physical defect may be neglected if at all possible of correction, special "follow-up sheets" are used by the inspectors, such sheets having transferred to them from the ordinary record sheets the names of children suffering with serious physical defects which have not been corrected during the three months subsequent to the examination of the child, in spite of three regular monthly inquiries and parents' notifications. These cases are pursued by both inspectors and school nurses, the parents being urged to correct the defects for the sake of the child. It is hoped that next year the school principals and teachers will actively cooperate in the endeavor to secure treatment of these severe

neglected cases, since retardation in school and more laborious teaching are resulting conditions.

The number of inquiries made by inspectors regarding the correction of physical defects and the curing of minor contagious diseases cannot be given accurately, since detailed reports on this item would have wasted a large part of the inspector's time. The number, moreover, is not difficult to arrive at by estimation, since the school nurses who are assigned to 108 school buildings of the 300 existing in Philadelphia relieve the medical inspector of this work, and, on the other hand, the number of inquiries necessary regarding the correction of a physical defect vary from one to three in most cases, and in a few cases may even equal five or six. Assuming that of the 138,098 physical defects found, one-half were in the third of the City covered by the school nurses, and that the remaining one-half (namely 70,000) necessitated two inquiries each by the inspectors, the number of inquiries would equal 140,000. These 140,000 inquiries, more or less, necessarily accompanied as they are by the necessity of entering the correction of the defect upon the records, constitute a considerable time factor in the inspectors' work.

VIII. Routine Physical Examinations.

Routine physical examinations are provided for in the School Code of Pennsylvania, but this mandatory provision includes only examination of the vision and hearing of the children.

The Philadelphia system of medical inspection determines the acuity of vision and hearing by direct test, the presence of nasal obstruction and the condition of the mouth, throat and heart by exact observation, and the condition of the skeleton, nutrition, nervous system and skin by general observation. Eye strain is diagnosed by

the presence of defective vision or habitual eye fatigue and frontal headaches. Strabismus and inflammatory eye conditions are also noted. The Snellen's test type card, used in the routine test for visual acuity, was prepared by the Department and its accuracy passed upon by Dr. Alexander Randall, of the University of Pennsylvania, before the plate was made from the drawings.

Nasal respiration is tested by having the child shut his mouth and breathe through his nose, one nostril at a time. No sharp differential diagnosis is attempted between "nasal obstruction," "adenoids," 'hypertrophic rhinitis," *et cetera.* The inspectors are instructed to list all as nasal obstruction, except cases of purulent catarrh, due to filth, existing evidently without obstruction. In cases regarded as "nasal obstruction" the accompanying catarrh is not noted, as it is simply a secondary symptom of the primary obstruction. Tonsils are reported as "enlarged" when they are of extremely large size, or moderately enlarged with pitted, scarred surfaces from chronic inflammation. For the sake of simplicity, old, shrunken tonsils, diseased because of a primary hypertrophy, are classed in the same category as the main group.

The hearing is tested routinely by the whispered voice, the inspector standing behind the child and questioning it in a very low voice, first on one side and then on the other, while testing the vision. Experience has shown that the whispered voice test performed 20 feet away from the child is not practicable in school work. The rumbling of wagons in the street, the general noise of the school, the lack of time and often the small size of the room prevent what would otherwise be the more desirable method. If upon the test just mentioned the child's hearing is deemed defective, it is then measured with the medical inspector's watch, and the distance at which the

watch can be heard, stated in inches, is placed upon the report. It may be stated in this connection also that the watch test routinely applied is valueless on account of the readiness of the children to say "Yes" to every question asked, unless the test is done with so many precautions that a prohibitive waste of time results.

Discharging ears are always noted, as they constitute a menace to the life of the children possessing them.

Carious teeth are noted and are recorded under two entries: (a) One to three carious teeth, (b) more than three carious teeth.

Nutrition is noted as normal or poor or fair. Anemia is separately noted only when the condition is marked. The distinction between the two is rather hazy, since it follows that an anemic individual cannot nourish his tissues properly.

Nervous exhaustion is the term employed to cover general nervousness and also slight symptoms of chorea, habit spasm, without, however, symptoms pronounced enough to justify a specific diagnosis of these disorders.

Orthopedic defects encountered are numerous and diverse. Many, however, are deformities which are not amenable to treatment and correction. The inspectors are instructed to pay particular attention to stoop shoulders and flat chest, and to noticeable cases of spinal curvature. In a few instances children with old monoplegias affecting one of the lower limbs, due to infantile paralysis, have been found and suitable shoes provided them, either through their purchase by the family or by some charitable agency.

Skin diseases include a great variety, embracing principally the parasitic contagious diseases, and eczema and dermatitis.

The inspectors have been cautioned to seek for the

cause of eczema in each case, remembering that poor nutrition, improper food or general unhygienic surroundings may produce eczema in any location, and that pediculosis and nasal catarrh may produce sub-occipital and facial eczema respectively. The variation in the prevalence of skin diseases according to the social grade of the children is one of the most striking features of medical inspection work. The personal uncleanliness and unhygienic surroundings of the children of the poor make them frequent sufferers from eczema, dermatitis, infected wounds and impetigo.

Enlarged cervical glands are not noted unless of considerable size or evidently tubercular. Such glands are so constantly an accompaniment of decayed teeth and enlarged tonsils that in over 90 per cent. of cases they have no special significance. In some cases enlarged cervical glands coexisting with malnutrition have caused the inspectors to transfer these children to special open-air classes.

Examination of the heart has been necessarily somewhat superficial, being limited to auscultation at the apex, general observation of the child and an inquiry as to dyspnoea on exertion. If heart disease is suspected from this elementary examination, such further examination is made as is possible without undressing the child. Necessarily many cases escape the inspectors, but the fact that 367 cases of organic heart disease were found during the course of the year shows that the attempt was productive of some results.

Examination of the lungs has not been undertaken. It is impossible to auscult through a linen shirt or a corset. In the case of children suspected of tuberculosis, or children who were candidates for admission to an open-air class, special examinations were, of course, made.

The measurements of height and weight were not made, such measurements having no practical value in ordinary cases.

Deficient mentality up to the present time has not been brought to the attention of the medical inspectors to any extent. During the year 351 cases were seen, diagnosed and reported, although it is well known from the "Backward Children Investigation" of 1911 in the schools of Philadelphia that about 250 evidently feeble-minded children and some 2,000 backward or "border-line" cases may be found in the Philadelphia public school population.

Twelve of the medical inspectors are now receiving special training in the expert diagnosis of mental deficiency, the plan being to extend the work so that official and trustworthy examination and judgment may be obtained by school principals without recourse to the Wednesday morning clinic held by the Director of the division at the Bureau of Compulsory Education.

IX. Physical Defects Recommended for Treatment.

The number of physical defects recommended for treatment totalled 142,536. These were not all found in the course of the routine physical examinations (111,854), since there were also 98,171 children sent to the medical inspectors by the teachers and principals of the schools, many of whom were sent because of suspected physical defects. An average of one defect per child was found, considering only the important ones of eye strain, nasal obstruction, etc., and not the relatively unimportant ones of dermatitis, pediculosis, etc., is also true.

Since no special study was made this year of the individual children's record cards, it is not possible from the figures here given to deduce statistics as to the pre-

valence of the different physical defects in children of school age. This, however, has been done in previous reports by different authorities, so that such a study at the present time would produce little that is original. The inspectors at the beginning of their work were informed that eye strain, evidenced either by defective vision, eye fatigue or headache, is found in about 28 per cent. of school children; that nasal obstruction exists in from 6 to 25 per cent., the larger figures occurring in the younger children of the poorer classes and the smaller figures in the older children of the better social classes; that enlarged tonsils occur about half as frequently as does nasal obstruction at the same age and under the same social conditions; that carious teeth are found in over 60 per cent. of children between seven and nine years of age, the proportion in some parts of the City amounting to 75 per cent.; that carious teeth in the upper or grammar grades are found in over 30 per cent. of cases, particularly in the upper grammar grades, as the occasional decay of the permanent teeth naturally increases the number; that defective hearing, severe enough to be evident and to constitute a drawback to the child's progress, exists in about 3 per cent. of the children; that stoop shoulders and flat chest exist in some 10 to 12 per cent. of the children.

The following is a summary of the defects found and reported by the school medical inspectors, such summary being the total of the monthly reports of the division, this in turn being compiled from the monthly reports of the supervisors, which ultimately were drawn from the weekly reports of the school medical inspectors.

Physical Defects Recommended for Treatment.

Eye.

Eye strain	19,302	
Squint	1,816	
Conjunctivitis	2,126	
Blepharitis	512	
Stye	1,743	
Glasses owned—not worn	5	
Foreign body in eye	82	
Ptosis	8	
Corneal opacity	11	
Nystagmus	2	
Cataract	8	
Corneal ulcer	5	
Iritis	4	
Chalazion	9	
Keratitis	4	
Pterygium	1	
Blepharospasm	1	
Miscellaneous eye cases	12	
Trachoma (see also cases excluded)	2	
Anterior synechia	1	
Corneal ulcer and keratitis	2	
		25,656

Nose, Throat and Mouth.

Enlarged tonsils	20,088	
Nasal obstruction	9,588	
Nasal catarrh	5,728	
Cervical adenitis (simple)	286	
Epistaxis	55	
Pharyngitis	957	
Acute coryza	99	
Tonsillitis	41	
Laryngitis	34	
Cleft palate	7	
Cleft uvula	1	
Stomatitis	18	
Acute sore-throat	183	
Deflected septum	3	
		37,088

Ear.

Defective hearing	1,177	
Impacted cerumen	51	
Acute otitis media	58	
Chronic otitis media	961	
Mastoiditis	2	
		2,249

Teeth.

Decayed teeth (one, two or three)	31,562	
Decayed teeth (more than three)	18,454	
	50,016	
Irregular teeth	19	
Alveolar abscess	9	
Teething	1	
Gingivitis	2	
		50,047

Orthopedic.

Hip disease	3	
Stoop shoulders	1,824	
Scoliosis	92	
Hemiplegia	3	
Infantile paralysis	12	
Tuberculosis of hip	10	
Rickets	5	
Flat foot	4	
Miscellaneous	70	
Deformity of jaw	2	
Paralysis (monoplegia or local)	3	
Ankylosis	1	
Torticollis	15	
Tongue tie	3	
Tubercular joint	1	
High arched palate	1	
		2,049

Anemia and Poor Nutrition.

Anemia and poor nutrition	2,543	
		2,543

Nervous Diseases.

Habit spasm	1
Nervous weakness	754
Chorea	132
Epilepsy	17

Enuresis	29	
Hysteria	1	
Neuralgia	1	
		935

Heart.

Heart disease	367	
		367

Defective Mentality.

Defective mentality	163	
		163

Gastro Intestinal.

Catarrhal jaundice	3	
Enteritis	15	
Constipation	20	
Gastritis	18	
		56

Skin.

Unclean	23	
Psoriasis	3	
Eczema	2,589	
Dermatitis—non-pustular	453	
Dermatitis—pustular, including simple impetigo.	1,454	
Urticaria	15	
Acne	114	
Herpes	75	
Furunculosis	220	
Non-infected wounds	1,356	
Infected wounds	3,025	
Scabies	28	
Vitiligo	1	
Insect bites	6	
Pediculosis (not excluded)	9,407	
Tinea corporis	518	
Tinea tonsurans	46	
Cellulitis	1	
Alopecia	14	
Ichthyosis	1	
Verruca	10	
Fleas	1	
Sebaceous cyst	4	
Vaccinia	2	

Impetigo contagiosa (not excluded)	4	
Burns	9	
Seborrhoea	6	
		19,385

Accidents and Acute Illness.

Bronchitis	267	
Influenza	3	
Acute indigestion	204	
Acute illness (including headache)	388	
Sprains	49	
Fractures	15	
Dislocations	15	
Paronychia	6	
Appendicitis	4	
Abscess	19	
Hematoma	1	
		971

Miscellaneous.

Hernia	3	
Ganglion	2	
Asthma	4	
Defective speech	161	
Rheumatism	67	
Myalgia and Myositis	68	
Orchitis	3	
Goitre	19	
Malaria	1	
Dysmenorrhoea	1	
Miscellaneous	698	
		1,027
Total		142,536

X. Proportion of Physical Defects Corrected.

The proportion of physical defects corrected upon recommendation of the inspectors is a most important item in the work of medical inspection. It has been stated, although not so frequently as a few years ago, that medical inspection is concerned more with the piling up of statistics than actually securing results.

As a proper study, and also to refute any such criticism at the present time, a special investigation was made as to results obtained.

At the close of the spring term the inspectors' record sheets, giving the names of the physically defective children and their defects, were summarized at the central office by the entire corps of inspectors. Because each sheet provides for three inquiries a month apart, only the work of February, March and April was available. This, however, provided 45,411 physical defects for investigation. This number provides a series large enough for accurate conclusions, and from it an estimate for the entire year (which would furnish a series about three times as large) may be made.

It is evident that race, nationality, social grade and the presence or absence of a school nurse constitute influences strongly affecting the results of medical inspection. In the case of race, nationality and social grade, such factors are, of course, unchangeable; but in the case of school nurses the factor is only existing at the will of the authorities.

While the variations due to all the factors are extremely interesting, the variations due to the presence or absence of the school nurse are of great practical value, indicating as they do the best method of assignment of the nurses and the field in which a nurse's services are the most valuable.

The record sheets mentioned were accordingly separated into groups depending on whether the children were (a) "white native," "white foreign" or "colored;" (b) of social grades "a," "b" and "c"—"a" being the highest—and (c) whether or not a school nurse was employed. Combinations of these three bases furnish 18 sub-groups, although some of these proved to be non-existent, since the

"colored" and the "white foreign" population were not in any case classed as of the highest social grade.

The results of the investigation are given in the two tables appended. They show what one would naturally expect, namely, that the physical defects of the children of the poor and ignorant are not corrected unless some one visits the home and personally talks with the parents. The offer to escort the children to a free dispensary is a second inducement that may be mentioned. The great increase in results obtained by the nurses in the case of the subgroups comprising the poorer social classes certainly justifies the expense of the nurse throughout the poorer districts of the City.

On the other hand, the percentage of physical defects corrected in the better social groups was only slightly better with the assistance of the school nurse than without such assistance. In neither case was it what it should be. But discussion on this point is beside the mark.

The apparent lesson in this latter group is that the school nurse, if used at all, may well visit a school only at occasional intervals for a period of two or three weeks, during which time she endeavors to secure correction of defects already noted by the inspector as unsecured.

Proportion of Physical Defects Corrected Consequent to Recommendation.

Physical defect	No. cases recommended for treatment	No. cases treated	Percentage of cases treated
Eye strain	7,486	2,325	31.05
Nose and throat	10,007	—	—
Treated by operation	—	828	—
Treated without operation	—	2,182	—
Total number treated	—	3,000	30.00
Ear defects	786	499	66.28
Carious teeth	14,677	4,293	29.2
Poor nutrition and nervous disorders	734	341	46.4
Orthopedic	339	118	34.8
Total important	34,069	10,888	31.4
Minor non-contagious	5,481	4,803	87.6
Minor contagious	3,511	3,147	89.6
Miscellaneous	2,374	1,872	78.8
Total unimportant	17,366	9,723	85.5
Grand total	45,411	20,442	45.

Special Investigation—Proportion of Physical Defects Corrected.

February 1 to May 1, 1912.

Showing effects of different conditions of race, social grade and assistance by school nurses.

	1st Social Grade A. White native, nurse	1st Social Grade A. White native, no nurse	2d Social Grade B White native, nurse	2d Social Grade B. White native, no nurse	3d Social Grade C. White native, nurse	3d Social Grade C. White native, no nurse	2d Social Grade B. White foreign, nurse	2d Social Grade B. White foreign, no nurse	3d Social Grade C. White foreign, nurse	3d Social Grade C. White foreign, no nurse	2d Social Grade B. Colored, nurse	2d Social Grade B. Colored, no nurse	3d Social Grade C. Colored, nurse	3d Social Grade C. Colored, no nurse
	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.	Per Ct.
Eye strain	38.	29.	32.	35.	35.	16.	—	40.	31.	16.	—	35.	42.	20.
Nose and throat (by operation	9.	7.	18.	8.	14.	3.	—	8.	5.	5.	—	14.	7.	7.
Nose and throat (without operation)	18.	18.	27.	21.	28.	8.	—	32.	27.	11.	—	14.	33.	—
Ear	93.	55.	60.	44.	64.	28.	—	71.	85.	52.	—	—	80.	40.
Teeth	32.	24.	36.	29.	41.	9.	—	44.	35.	19.	—	31.	33.	12.
Nutrition and nervous	91.	45.	76.	27.	84.	11.	—	20.	55.	47.	—	—	60.	—
Orthopedic	40.	50.	47.	10.	41.	—	—	—	36.	—	—	27.	—	—
Total important defects	36.	28.	41.9	32.5	43.	12.	—	44.7	37.5	19.	—	32.8	41.9	16.2
Minor non-contagious skin	85.	85.	92.	83.	89.	60.	—	85.	89.	75.	—	100.	95.	70.
Minor contagious diseases	100.	94.	91.	92.	88.	81.	—	93.	90.	39.	—	100.	99.	100.
Miscellaneous	74.	81.	65.	80.	57.	51.	—	91.	85.	59.	—	100.	99.	—
Total unimportant defects	84.	87.	85.	85.	82.	68.	—	93.	87.	70.	100.	100.	97.	80.
Grand total defects	43.	35.5	49.9	43.3	50.	12.	—	60.	55.2	27.	100.	40.	62.2	21.7

XI. Exclusions for Those Contagious Diseases Reportable to the Bureau of Health.

The children excluded by the inspectors on account of scarlet fever, diphtheria, positive throat cultures, measles, German measles, chicken-pox, mumps, whooping cough and tuberculosis number 1,949. Of these cases 377 were children exhibiting positive throat cultures due to exposure to infection, but without clinical disease, 150 were children noted as suspicious scarlet fever, 54 were noted as suspicious diphtheria and 17 as suspicious measles. The remaining 1,351 were clinical cases diagnosed positively.

In addition to the cases actually seen by the inspectors 734 cases were reported to the Central Office by the inspectors upon information from the parent or school principal. These cases, almost without exception, had not as yet been reported to the Division of Contagious Diseases by the family physician. Indeed, in many of the cases of measles and chicken-pox occurring among the poor, there was no family physician. By taking these cases and transmitting them promptly to the Division of Contagious Diseases the health of the community was conserved and prolonged exclusion of the children by reason of late official report of the case was avoided. In this latter class of cases, not seen although reported by the inspectors, it was found necessary to accept information from a responsible party only; accordingly instructions were issued at the central office not to receive such reports unless the diagnosis was vouched for by the parent, principal, or attendance officer. These instructions were necessary, since every report transmitted to the Division of Contagious Diseases entailed a visit to the home by one of the inspectors of the Bureau of Health—this sometimes over a considerable distance. Children stating that measles or other reportable contagious disease existed at

home were told to return home and bring a statement from the mother. If the child did not return, the attendance officer took up the case and the Bureau of Compulsory Education subsequently rendered a prompt report.

The difficulty of diagnosis attending cases of reportable contagious diseases seen in the school was responsible for a considerable number of diagnoses termed "Suspicious." In a considerable number of these cases the school inspector and the inspector of the Division of Contagious Diseases differed in their diagnoses. While no doubt in many cases one or the other of the inspectors was the better diagnostician, and courtesy accords that the Division of Contagious Diseases furnishes the more expert men in this connection, the fact remains that most of the disagreements were due to the fact that the cases were seen by the contagious inspector later in the course of the disease when the eruption or sore throat or parotid swelling was subsiding. In the case of German measles, in which the rash appears and disappears in the course of 36 hours, it was obviously impossible for the school inspector, the inspector of the Bureau of Health and the family physician to see the same clinical picture. In the case of scarlet fever, a symptom-complex in which sore throat, rash, onset with nausea, and rapid pulse are variable factors in each case, and in which desquamation is a sequence of variable intensity, extent and time of appearance, the difficulties of diagnosis in many cases baffle the most expert. Indeed, the disease in several cases caused the Bureau of Health experts, when called into consultation, to refuse to render a positive diagnosis, and to simply recommend the careful future observation of these cases.

On account of the foregoing reasons the charts here submitted showing the proportion of agreement and disagreement of the inspectors of the two divisions is very inter-

esting. Unfortunately, there are a certain number of cases marked as "disagreements" which were among the 734 cases reported by the inspectors on the information of the parent or principal. These cases, however, as a rule, prove to be authentic, so that the table is fairly trustworthy.

Exclusions for Contagious Diseases Reported to the Bureau of Health.

	Seen by Inspector	Reported by Parent, Teacher etc.	Total
Scarlet fever	82	28	110
Suspected scarlet fever	150	11	161
Diphtheria (Confirmed by positive culture 41.)	56	16	72
Suspected diphtheria	54	4	58
Contact and culture	377	—	377
Measles	76	157	233
Suspected measles	17	—	17
German measles	17	1	18
Chickenpox	488	181	669
Mumps	526	274	800
Whooping cough	67	62	129
Tuberculosis (lungs)	9	—	9
Tuberculosis (cervical glands—not suppurating)	7	—	7
Tuberculosis (cervical glands—suppurating)	23	—	23
Totals	1,949	734	2,683

Office record of exclusions by medical inspectors, showing the proportion of agreement and disagreement in diagnosis between the school inspectors and the inspectors of the Division of Contagious Diseases. The cases in which disagreement occurred illustrate the difficulties attendant upon diagnosis (a) of scarlet fever in any stage, (b) of the various contagious diseases late in their course, and (c) doubtless in some instances the diagnostic ability of the physician.

Diphtheria		Scarlet fever		Measles		Chickenpox		Whooping cough		Mumps		German measles		Miscellaneous	
Diphtheria	Suspicious diphtheria	Scarlet fever	Suspicious scarlet fever	Measles	Suspicious measles	Chickenpox	Suspicious chickenpox	Whooping cough	Suspicious whooping cough	Mumps	Suspicious mumps	German measles	Suspicious German measles	Trachoma	Typhoid fever
Agreed		Agreed		Agreed		Agreed		Agreed		Agreed		Agreed		Agreed	Agreed
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Yes
57	6	33	28	92	19	81	79	186	47	10	7	610	48	19	7	110	14	5	—	710	85	7	11	11	5	4	1

XII. Exclusions by Inspectors for Minor Diseases.

For Minor Contagious Diseases.

Acute sore throat	1,766
Acute conjunctivitis	237
*Pediculosis	1,337
Scabies	189
Tinea corporis	293
Tinea tonsurans	168
Impetigo contagiosa	165
Favus	17
	4,172

Exclusions for Other Causes.

Epilepsy	3
Pustular eczema	2
Offensive and unclean	118
†Not vaccinated	201
Acute illness	221
	545

†So far as is known these children all returned to school vaccinated within a few days after exclusion.

*See Section No. XXVII, nurses' report for other cases.

AVERAGE DAYS LOST FROM MINOR CONTAGIOUS DISEASES.

Special Investigation, Including All Schools. Classified in the Three Groups Studied.—February 1 to May 1, 1912. Table Gives Number of Cases in Each Series and Average Days Lost.

WHITE NATIVE Social Grade A.	Nurse			No nurse		
	Number of cases	Total days lost	Average days lost	Number of cases	Total days lost	Average days lost
Pediculosis	7	9	1.2	92	193	2.09
Ringworm	—	—	—	12	50	4.1
Scabies	—	—	—	—	—	—
Impetigo	—	—	—	—	—	—
Acute sore throat	7	15	2.1	30	126	4.2
Acute conjunctivitis	—	—	—	—	—	—

WHITE NATIVE Social Grade B.	Nurse			No nurse		
	Number of cases	Total days lost	Average days lost	Number of cases	Total days lost	Average days lost
Pediculosis	83	146	1.78	82	402	4.90
Ringworm	9	31	3.4	6	27	4.5
Scabies	9	137	15.2	14	287	20.
Impetigo	8	44	5.5	—	—	—
Acute sore throat	31	120	3.8	44	227	5.1
Acute conjunctivitis	13	81	6.2	—	—	—

WHITE NATIVE Social Grade C.	Nurse			No nurse		
	Number of cases	Total days lost	Average days lost	Number of cases	Total days lost	Average days lost
Pediculosis	6	27	4.3	31	117	3.7
Ringworm	—	—	—	—	—	—
Scabies	—	—	—	—	—	—
Impetigo	—	—	—	—	—	—
Acute sore throat	11	56	5.	6	28	4.6
Acute conjunctivitis	—	—	—	—	—	—

WHITE FOREIGN Social Grade C.	Nurse			No nurse		
	Number of cases	Total days lost	Average days lost	Number of cases	Total days lost	Average days lost
Pediculosis	64	186	2.9	24	71	2.5
Ringworm	27	55	2.	19	137	7.2
Scabies	14	117	8.3	9	56	6.2
Impetigo	11	76	6.9	—	—	—
Acute sore throat	115	468	4.	27	126	4.6
Acute conjunctivitis	23	69	3.	—	—	—

XIII. Loss of School Time Because of Minor Contagious Diseases Avoided by the Work of the School Nurses.

The time measured in school days saved to the children by the school nurses amounts in the aggregate to a considerable item; the maximum figures may be obtained from the chart giving the comparisons of exclusion periods with and without nurses in different social groups. These figures, which, it should be rememberd, are only for three months' time and are only for certain groups which furnished numbers large enough to make reasonable calculations, give a saving of 511 days to 172 children treated by the nurses. (The calculation is made by estimating the time saved in each group and multiplying by the number of cases treated by nurses, then adding the figures for each disease to the totals just mentioned.) Such figures, however, do not convey a true idea of the number of days saved by the school nurses. In order to obtain a clear idea of these one should have recourse to the report of the work of the nurses, which shows 922 cases of ringworm treated, and the report of minor contagious diseases excluded by the inspectors, which shows 293 cases of ringworm (not including the cases recorded of ringworm of the scalp).

Assuming that three-fourths of the inspectors' cases (220 cases) were in schools covered by the school nurses, it is at once seen that most of the cases handled by the nurses (702) were treated by the nurses without being excluded from school at all.

In section XII, chart 2, ringworm cases excluded in schools without nurses lost an average of four and one-half days each. In those schools possessing nurses the exclusion time, when exclusion was found to be necessary,

was 1 1-10 days shorter than in corresponding schools without nurses (section XII, chart 2). Thus, in the final comparison we have 922 cases of ringworm treated by the nurses, of which 702 were not excluded at all and 220 were excluded about three and one-half days each, while in the schools without nurses 73 cases of ringworm were excluded four and one-half days each. It can easily be calculated that the 923 children handled by the nurses instead of losing a total of 770 days, would have lost 4,153 days if the nurses had not been provided. Similar calculations can be made for the pediculosis cases.

The best concrete example to be furnished of the saving of the children's time occurred at the Reynolds Public School, populated by colored children. Here 38 children suffering from ringworm of the scalp were found. Dr. Turner, School Medical Inspector, and Miss Reeves, School Nurse, working together, saved these children suffering with this peculiarly chronic and obstinate form of ringworm from any exclusion whatever. By persistent treatment with oil of cade, tincture of iodine and ammoniated mercury the cases, moreover, were actually cured, a remarkable achievement. When one considers that the average case of ringworm of the scalp exists for months it can be seen that this was a remarkable instance of the time saving now under consideration.

It is in case of pediculosis, however, the element of time saving effected by the nurse is most prominent. The annual report of the head nurse shows 10,544 cases of pediculosis treated by nurses, which number cannot contain more excluded cases than the 1,337 cases mentioned as total exclusions by the medical inspectors. In reality most of the exclusions for pediculosis occurred in schools where there are no nurses. It can be seen that with an average exclusion time for pediculosis of about three days

where there is no nurse (section XII, chart 2) the nurses saved the children 31,632 days of school time (10,544 cases multiplied by 3—the average number of days lost per child).

These totals of 31,596 days saved in the case of ringworm and 31,632 days saved in the case of pediculosis, added to the time saved in the other cases of scabies, impetigo, acute sore throat, favus, acute conjunctivitis, trachoma and unvaccinated children, would probably total 40,000 days. Since the education of the children costs the school system 15 cents per day it can be seen that the saving to the children and consequently to the community, measured in dollars and cents, equals for this work alone $6,000 per annum, an amount between one-quarter and one-third of the total budget for the school nurses appropriated by the Board of Education.

XIV. Throat Cultures.

In view of our knowledge that diphtheria is very frequently transmitted by so-called "carrier cases," who are themselves not ill or simply suffering with slight sore throats, it is evident that the stamping out of diphtheria depends largely upon the bacteriological investigation of the throats of children apparently well. For this reason it was determined in October, 1912, to culture the throats of all children in a class room when a case of diphtheria was discovered there. These class rooms were thus investigated, some cultures being taken from the children whose desks were situated near the diphtheria patient and others from the throats of children whose desks were in a far corner of the class room. The result of this investigation, the throat cultures being taken because of the presence in the class rooms of a child or children with clinical diphtheria, showed ten positive cultures out of a

total of 81 cultures taken. As a general rule, the positive cultures came from children seated near the diphtheria patient, but it was at once evident that the exceptions to this rule were so frequent that limiting the cultures to immediately surrounding children was of little practical value as a guide to conditions in the entire class.

Determining, therefore, to ascertain exactly the condition of all the children in the class room so that general working rules on a scientific basis might be formulated, orders were issued to the school inspectors to take cultures from the entire class whenever a case of diphtheria was found in the school. Dr. C. Y. White, Chief of the Bacteriological Laboratory, Bureau of Health, very generously co-operated in this investigation. Twenty-two class rooms were thus cultured before the investigation was considered complete.

The result showed that 22 class rooms harboring 26 cases of diphtheria yielded 157 positive cultures out of a total of 897 throat cultures taken. This gave a general average of 17.5 per cent. The grouping of the positive culture cases did not follow any absolute rule. It was noticed, however, that somewhat more positive cases were found in the neighborhood of the children suffering with diphtheria, and that frequently and in curious proximity to the positive cases were found three, four or five children sitting in a row or in a row with a right angle bend in it, all showing positive cultures.

It was also established that children attending a school in which diphtheria is prevalent frequently show positive cultures even though no cases have occurred in the particular class rooms occupied by these children. In the Finletter School during September, October and November, 1912, a series of cases of diphtheria occurred, some eight or ten in all, and these so persistently that a deter-

mined effort was made to stamp out the disease. For this reason a culture was taken from the throat of every child in the school. In four class rooms no cases of actual diphtheria had occurred. These four class rooms furnished 34 positive cultures out of 182 cultures taken, or positive cultures in 18.7 per cent. of the cases. In another class room a brother of a diphtheritic child had been attending school, and cultures in this instance showed five positive cultures out of a total of 35 taken, a proportion of 14 per cent.

In consequence of the facts just described a permanent working rule has been established to examine visually the throats of all the children in any class in which a case of diphtheria has occurred. If a second case occurs or if the first case is found by the inspector actually in the class room, cultures are taken from the entire class.

In section I of this report is given a total of 397 positive cases out of 2,179 cultures taken under all conditions, a proportion of 18.2 per cent. It is readily seen that the time and labor involved is justified.

XV. Vaccinations.

The school inspectors vaccinated 2,312 children during the nine months' work here recorded. The decision to do this work was made after consideration of the Pennsylvania law requiring the successful vaccination of all school pupils and the loss of time resulting from the exclusion of children when this was required to be done without the offer of free aid. To the possible objection that the work exceeded the ordinary province of medical inspection, which is to recommend the correction of defects and diseases, but to leave such correction in the hands of private physicians, the point was well taken that any parent could take the child to the family physician if they so desired,

while the mandatory character of the vaccination law warranted including free vaccination as a part of public health work, just as free antitoxin, free laboratory examinations and free medical inspection are furnished to the public.

Each medical inspector is furnished with alcohol, cotton and gauze so as to insure an aseptic operation. Printed forms are provided on which the parent signs an application for vaccination by the school physician. The success of the vaccination is duly noted and the form is then forwarded to the Central Office and filed. Cases of disputed vaccination (none have occurred so far) are referred to the Chief of the Division of Contagious Diseases, who makes a decision as to the actual condition. Children having failed to be successfully vaccinated, either by the private physician or school inspector (none of the latter class have so far occurred) are referred to the office of the Chief Medical Inspector of the Division of Contagious Diseases, whose first assistant has been assigned to duty to vaccinate such cases upon request. So far no failures by this official have occurred this year.

XVI. Disinfection of School Buildings.

During the year 335 disinfections were done. Of these 153 were ordered on school days and 182 on Saturdays.

In dealing with contagious diseases, the exact source of contagion often not being known, it is evident that a general working rule is necessary in order to preserve one's judgment and avoid criticism when dealing with particular situations. The general plan has been therefore adopted to disinfect on a school day only when a child actually sick with scarlet fever or diphtheria has been in the school within the last 48 hours. The great majority of such cases are, of course, found by medical inspectors them-

selves, but a few are reported by the Bureau of Health with a supplementary statement from the teacher that a child was ailing in school on the day before.

On a few occasions a disinfection on a school day was done because of an epidemic of chicken-pox or other of the less dangerous contagious diseases.

Loss of time to the school system was saved as much as possible by disinfecting in the afternoon rather than in the morning, the class in which the case of contagious disease occurred having been dismissed at once and the class room closed without disturbance to the other classes during the morning session. When a case of diphtheria or scarlet fever was discovered on a Thursday afternoon or on a Friday a similar economy of time to the school system was effected by dismissing the single class harboring the case until Monday and disinfecting the school building on Saturday.

Saturday disinfections, as a rule, were ordered for less serious causes than school-day disinfections. Several cases in one school of chicken-pox, mumps, whooping cough or measles justified this procedure. Schools in which three or more cases of scarlet fever or diphtheria had occurred within a recent period were also disinfected on Saturdays.

An effort has been made to impress upon both the medical inspectors and teachers the fact that the actual expense of disinfection in material and labor is relatively small, but the expense of the disinfection on school days, entailing the dismissal of a school of 1,000 pupils, is a loss to the school system of $75 for each half day, remembering that the expense of education is about 15 cents per day per school child.

Endeavor has been made also to impress upon the inspectors and teachers the fact that disinfection of a school

building is valuable, but not absolutely a protective measure. The protection of school children from contagious diseases requires consideration of the children's throats, skin, clothing, clothing closets, lead pencils and the general room furnishings in the schoolhouse; also the consideration of the brothers and sisters, Sunday-school classmates, milk supply and other factors outside the school. Also, the difference in the means of transmitting the different diseases has been borne in mind and placed before those interested. Particular relative frequency with which diphtheria is transmitted by "carriers," and the evanescent quality of measles virus compared to the enduring virility of the virus of scarlet fever and chicken-pox has been emphasized.

Considerable thought has been given to the problem of unit disinfection of class rooms. With our large new buildings constructed in the most sanitary manner and containing 30 or more class rooms, it is evident that disinfection of the whole school building for a single case of contagious disease in one class room is an expensive procedure, and not necessary from a sanitary standpoint. Whether improvement on the present method can be accomplished by sealing single rooms and disinfecting with the formaldehyde gas now used, or whether improvement will be accomplished by the use of some other method of disinfection, such as spraying with bactericidal solution, is not known. At the present time an experiment is being started to determine the value of the latter method.

The virtue of simple cleanliness induced by scrubbing with soap and water should not be forgotten or even minimized when considering the subject of disinfection. On several occasions during school days this method was used instead of disinfection of the class room.

Just as in the domain of surgery the realization has

come that asepsis is better secured by soap and water than by any other single agent, so in matters of school sanitation it should be realized that an industrious, cleanly janitor, day in and day out, is a much better protection than a dirty school with an occasional disinfection.

XVII. Sanitary Inspection of School Buildings and Sanitary Defects Reported to the Board of Education.

By provision of the Pennsylvania School Code the sanitary condition of every school building is to be reported upon each year by the medical inspector. The School Code also provides that schoolhouses hereafter (1911) erected shall possess 200 cubic feet of air space per pupil in the class room and shall have a window illumination area of one-fifth of the floor space. Such requisite provision for proper illumination and ventilation, however, does not extend to old buildings.

During the last year an efficient system of sanitary inspection has been devised, including an original complaint by the assistant school inspector, its verification by the supervisor of the district, its transmission to the Superintendent of School Building or to the Division of Sanitation of the Bureau of Health, as the nature of the case may require, and final information as to the correction of the sanitary defect.

Mr. J. Horace Cook, Superintendent of Buildings of the Board of Education, has shown a most co-operative spirit in remedying sanitary defects found in the great majority of instances, and Mr. James McCrudden, Chief of the Division of Sanitation, in every case has promptly caused the abatement of unlawful unsanitary conditions.

The plans for the next year are more comprehensive. A specific statement will be obtained as to the condition of

every building, and due consideration will be given to the matter of illumination and ventilation of the class rooms as well as the more evident items of drainage, leaks and paving.

The following is a list of the sanitary defects reported by the inspectors during the year 1912:

Inspections.

Number of routine sanitary inspections of schoolhouses (semi-annual)	560
Number of sanitary defects reported by inspectors to the Central Office	237
Number of sanitary defects inspected and endorsed by the supervisors and transmitted to Board of Education	193

Unsanitary Conditions.

Toilets (urinals, cesspools, toilets not cesspools)	84
Illumination	84
Ventilation	17
Drinking water	13
Leaking roof	4
Plastering and painting	5
Heating	7
Building generally objectionable	1
Overcrowded coat rooms	6
Nuisance in neighborhood	8
Yard paving	12
Drainage insufficient	3
Fire menace	4
Overcrowding	2
Improper seating	1
Water closet flooring	1
Insufficient yard space	2
Leak in basement	1
Dangerous stairs	1
Bad floors	1
Leaking gas fixtures	2
	193

XVIII. Clinic for Mentally Defective Children.

A clinic for the examination and diagnosis of mentally defective children has been held weekly at the Bureau of Compulsory Education by the Director of the division. Such a clinic is absolutely necessary to the work of this Bureau, since numerous cases must be excused from school on account of mentality so low that actual idiocy exists, and others who are undoubtedly feeble-minded must be sent to special classes for defective children because of inability to do the regular school work. The clinic, on account of the special work in this field, of the Director of the Division, has caused the examination of many other children at the request of the principals of schools. The work has reached such a stage that it is necessary to establish branch clinics so that the District Superintendents of Schools will be furnished with the means of expert medical examination of children nominated by the principals for special classes. A medical inspector from each of the school districts has been selected and given a course in training for the purpose of carrying out this plan.

During the last year the clinic has received from three to ten children at each session, with the consequent examination of about 200 children. Of these 108 were certified by the director of the clinic as feeble-minded who should properly be in institutions.

XIX. Special Open-Air Classes.

The School Code of Pennsylvania provides that no child suffering from tuberculosis shall be permitted to attend the public schools unless placed in a class especially designed for this purpose. At the time of present writing no such classes have been established in the City

of Philadelphia, although the names of several children suffering with active tuberculosis have been received at the Central Office from the medical inspectors and have been filed with a view to action in the near future.

Three special classes for poorly-nourished children, possibly with latent tuberculosis but not actively tuberculous, exist in the schools. They provide fresh air, special warm clothing, rest chairs and physical exercise. The curriculum is ungraded, owing to the difference in age and education of the children admitted. No food is provided from official sources, although at the class in the Wilson School Annex an energetic teacher has secured money from outside sources to give two meals a day to the children.

There has also been instituted a fresh-air class whose sole distinguishing feature is absolute ventilation and warm clothing for the children to meet the rigors of winter weather. This class was really an experiment in the domain of ordinary education to ascertain the results of absolute ventilation combined with generally hygienic conditions. Here there was but little selection on the ground of physical fitness, the admission to the class being by request of the parents, most of the children being in fair or good health.

Because of basic differences in the open-air classes just mentioned one description does not serve for all, and therefore the special open-air classes for poorly-nourished children and the fresh-air experimental class will be described separately.

A. *Special Open-Air Classes for Poorly-Nourished Children.*

The special class at the McCall School Annex is the one formerly conducted under the auspices of the Phipps Institute for the Treatment of Tuberculosis, on the roof

of the College Settlement. Its transfer to the Board of Education was made, at the request of the Phipps Institute, and its full control by the Board of Education necessitated the dropping of the school lunches served during the day. The class at the Wilson School Annex has always been entirely under the auspices of the Board of Education. It was established early in 1912. The class at the Lighthouse Social Service Building, at Front street and Lehigh avenue, was established by the last named institution in co-operation with the Pennsylvania Society for the Prevention of Tuberculosis. Recently the Board of Education has assumed the extra expense incurred in conducting this class, and it does not differ from the others, except that the Lighthouse Institution donates the roof of its building, fitted up at considerable cost. It should be noted that this class owes its existence to Mr. Carl De Schweinitz, the energetic Secretary of the Pennsylvania Society for the Prevention of Tuberculosis.

The number of children in these classes is somewhat less than that found in the ordinary class rooms. At the Wilson School Annex the average attendance is 28 with a maximum enrolment during the year of 31. At the Lighthouse there are 18 children. The special class at the McCall School Annex contains 20 pupils.

Class of Cases Admitted.

The report of Dr. Spangler, Supervisor, concerning the class at the Wilson School Annex, states that of 24 pupils eight were anemic and under weight, four had phthisinoid chests with poor expansion, three showed evidence of marked malnutrition, three had histories of strong family predisposition to tuberculosis, two were convalescing from acute illness and one each suffered from non-suppurating adenitis, chronic laryngitis, chronic bronchitis and nerv-

ous exhaustion with fair nutrition. In this class there were 15 boys and 9 girls, the ages ranging from 8 to 14 years. Four were native Americans, three Russian Jews and 17 Italians. In 20 of the 24 cases the family histories were negative or unobtainable. In only four cases was a family history of tuberculosis reported.

At the McCall School Annex many of the children have been with the class since its institution two years ago by the Phipps Institute and are generally in very fair condition. Dr. Spangler, in his June report, however, recommended that certain of the children be sent out of the City during the summer by some social agency, and in connection with this recommendation made a report on their physical condition. Two illustrative cases may be quoted:

"Isadore B————————, 517 C———————— street, temperature 99.4; has a cough but no definite lung lesion could be located. He is stoop-shouldered, suffers from malnutrition and looks anemic."

"Tony G————————, 422 F———————— street. His daily temperature range is from 98.4 to 99.4, and the breath sounds over the apices of both lungs are harsh and the upper lobe of the left lung presents some fine dry rales. There is a chronic hoarseness, possibly indicating some laryngeal involvment."

Method of Admission and Discharge.

The original selection of children is made by the school principals and the assistant medical inspectors. The latter fill out Form No. 1, here shown. The school nurse is then given on Form No. 2 the name and address of the child. She visits the child's home, obtains information as to the family and the previous personal history of the child and makes a report as to the sanitary and

social condition of the home. Forms No. 1 and No. 2 are then sent with the child to the open-air class on a day (once a week) on which the medical supervisor of the district examines applicants for admission. The latter records his physical examination on Form No. 3 together with a summary of the facts stated on Forms No. 1 and No. 2.

If the medical supervisor deems the case a proper one for admission, he then notifies the district superintendent of schools, nominating the child for admission. Unless special circumstances interfere the district superintendent directs the transfer in accordance with the medical advice thus furnished by the medical supervisor.

Architectural Plan and Equipment.

The class at the Wilson School Annex is housed in one of the ordinary school rooms, the south wall having been torn out and a large window inserted in the east wall. The room measures 36 feet by 20 feet with a 12-foot ceiling. Glass doors close the open south wall when this is desired. An iron balcony outside, fitted with a sun awning, leads to a fire escape. The class room on the Lighthouse Social Service Building is located on the roof, is a skeleton structure of steel, closed on three sides with folding glass partitions and surrounded on three sides by an open space which extends to the edge of the roof and is used for play and recreation ground. The class at the McCall School Annex, transferred from the roof of the College Settlement, occupies a room with the upper half of the outside wall torn out and fitted with large sashes, with an adjoining ordinary room which is used as a dressing room, and occasionally in winter during writing exercises.

The clothing of the children at the present time dif-

fers slightly in the three classes, as it has been purchased and donated by different private societies. That provided at the Lighthouse Open-Air Class by the Pennsylvania Society for the Prevention of Tuberculosis consists of warm pant-like bloomers which come well up under the arm-pits with a broad bib-like apron in front, high felt boots and worsted caps. The children themselves furnish their jackets, sweaters or coats and their mittens or gloves.

At the Wilson School Annex blankets are provided for use during exceptionally cold weather, but most of the time the regular outdoor clothing of the children has been found to be sufficient.

Provision by the Board of Education for suitable overclothing has been made just previous to this writing, and consequently what may be termed the final outfit has not yet been selected. The Board has allowed $200 annually for each class.

Routine Supervision and Program.

A. MEDICAL. The class has the services of a medical inspector and a school nurse.

A physical record card, Form No. 4, is used. On this is given weekly the temperature, pulse and weight of every child. If in any case the temperature or pulse are elevated, these readings are made daily, and in addition a special examination of the sputum is made. Miscellaneous observations may, of course, be made upon the card by the physician in individual cases. No blood counts have so far been made, since the anemia present is never of extreme degree. The gain or decline of the child's health may be accurately estimated by general observation of nutrition combined with the accurate temperature, pulse and weight measurements before mentioned.

The assistant medical inspector of the school in which the class is located attends to the routine medical work.

At the class in the McCall Annex and the Wilson Annex his visits are made daily, being designed primarily for the entire school in which the class is located. The class on the Lighthouse roof is visited twice weekly.

The school nurse connected with each class secures the temperature, pulse and weight of all children according to the system already described and records them upon the child's record card (Form No. 4, already mentioned).

B. Dietetic. Provision of food has not been made by the Board of Education, and the class at the Wilson School Annex alone furnishes food, the latter procured from private charity. At this class the room adjoining has been fitted up as a kitchen and dining room, where lunch is prepared and served on tables. The menus at the lunch period were as follows:

Morning lunch—Oatmeal and milk, rice, vegetable soup.

Afternoon lunch—Baked potatoes, cocoa and malted milk.

C. Educational. The classes so far have been ungraded. From the medical standpoint of this report it is sufficient to give the daily schedule followed at the Wilson Annex Class.

A. M.	
9.00 to 9.10	Opening exercises.
9.10 to 10.00	Arithmetic.
10.00 to 10.30	Games, physical exercises and lunch.
10.30 to 11.05	Language.
11.05 to 11.20	Dictation and spelling.
11.20 to 11.40	Geography.
11.40 to 11.50	History.
11.50 to 12.00	Dismissal.

P. M.		
1.30 to	1.45	Rapid arithmetic.
1.45 to	2.00	Physiology.
2.00 to	2.30	Recess and lunch.
2.30 to	2.45	Rest period, and reading by teacher.
2.45 to	3.30	Monday, Wednesday and Friday, reading. Tuesday and Thursday, drawing and manual work.

Results.

No definite reports have been made on the educational results in these classes except that Dr. Spangler, in connection with the open-air class at the Wilson School Annex, states that the children after admission became noticeably more alert and showed greater capacity for study. This improvement in the mental processes of the children is noted so strongly in the report on this school that it doubtless exists. Whether such improvement is altogether due to an increased physical vigor and life in the fresh air, or whether it is partly or wholly produced by the enthusiasm which goes with every new movement, or every movement being tested, or whether it is due to the small size of the class is not certain. The physical improvement in the children in these open-air classes is quite noticeable in most of the cases. At the Wilson School Annex the report for the term showed the gain in weight to be 79 pounds for the 29 pupils, an average gain of 3.29 pounds. In three instances the weight was the same at the beginning and ending of the term; in one case there was a loss recorded between October and June.

Such figures are those to be naturally expected. As to the continuance of improvement after several months in a special open-air class, we are not yet in a position to form conclusions. The influence of tuberculosis in certain of the cases and the relative benefits of the food, rest and fresh air provided cannot be gone into here.

During the term three of the pupils in this class had adenoids and tonsils excised, one was operated on for cervical adenitis and six had dental caries treated. No cases of acute illness or contagious diseases and but few cases of head-colds occurred.

The report of Dr. Moxey on the physical improvement of the children in the Lighthouse Open-Air Class is very interesting because in this instance six boys and six girls in a nearby public school (Isaac A. Sheppard) were selected as average children and were compared with the children in the open-air class from time to time as regarded their physical health. The average weekly gain of the anemic poorly-nourished children at the Lighthouse class was 3.3 ounces, compared with an average weekly gain of 3.5 in the normal child. Dr. Moxey was very well satisfied with this rate of gain, feeling that a normal increase had been secured even though the under-weight had not been made up.

Dr. Moxey, like Dr. Spangler, comments on the transformation of the child mentally, several of the children who previously had learned with difficulty now grasping their studies with greater ease.

The table of results at the Lighthouse furnished by Dr. Moxey is similar in plan to that furnished by Dr. Spangler, and for the sake of brevity is here omitted.

B. Regular Class with Provision for Absolute Fresh Air at Natural Temperature.

During the last three years there have been several advocates in various cities of school classes conducted in the open air with shelter and warm clothing for the children. Notwithstanding that the leading exponent of the system exaggerated the benefits to be obtained, and the report of the American School Hygiene Association

(April, 1912) showed that the only accurate records formulated showed nothing favorable from an educational standpoint in the open-air system, the plan is obviously so meritorious, provided certain obstacles can be overcome, that it was tried in one of the Philadelphia schools.

The institution of these classes was through the work of Dr. Roach, medical supervisor, who enlisted the cooperation of Messrs. Raub and Bishop, district superintendent and principal, respectively, of the Bache School.

This fresh-air class instituted at the Bache School, Twenty-second and Brown streets, is fundamentally an ordinary school class in the school system, the purpose being not only to benefit the particular children of the class, but to ascertain whether the plan is feasible on a large scale, whether the results physically and mentally are better than those obtained in the other classes of the City.

The selection of the children at the fresh-air class was made on a volunteer basis. A third-grade class was selected and the parents informed that a fresh-air class would be started with possibly considerable benefit to the children, and that the children in this class would be given preference provided the parent signed an application paper enclosed with the circular. The parents of 39 children accepted promptly, five did not answer and one declined. The six children were accordingly transferred to other classes. Meanwhile applications were received from the parents of some 20 children in other classes, and six of these were placed in the fresh-air class to make a quota of 45 children.

Following is a copy of the notice sent by Mr. Bishop to the parents of the children:

"*Bache School, Philadelphia, September 20, 1912.*

"To the Parents:—Your attention is called to an open-window class room at the Bache School. Its purpose is to give Nature a greater opportunity to help our children to learn rapidly and to grow strong. The cold, fresh air of our new class room will be soothing to the nerves and stimulating to mind and body.

"The occupants of this room will be protected in extremely cold weather with extra wraps and sufficient steam heat. They will not be subject to draughts. They will be given exercise and freedom that is not possible in the ordinary class room. Their physical welfare will be looked after constantly and noted regularly by the medical inspector. If you desire your child to be considered with others as an applicant, please fill out and return enclosed blank.

"Yours very truly,
(Signed) "WALTER C. BISHOP,
"*Principal.*"

A circular describing the healthfulness of natural fresh air was prepared by Dr. Roach and sent by Mr. Bishop with the note to the parents.

The form signed by the parents may also be given.

"Application

is hereby made to the principal of the Bache School, Twenty-second and Brown streets, for admission to an open-window class room of
Name of pupil
Age Grade Address
Date Signed

Parent or Guardian."

Another third-grade class in the school was selected as a basis of comparison when studying the results ultimately obtained. Children in these two classes did not differ in any characteristic at the time of the institution of the fresh-air class. The regular school program was followed during the term with modified physical exercises. Desk-chairs were provided for the class in order that these physical exercises could be readily carried out—an almost necessary provision on cold days. Standard platform scales with measuring attachment were installed. Woolen blankets, sweaters, woolen caps and hoods and knitted woolen gloves were also provided for optional use. Food for the pupils was not furnished at the school.

The temperature of the room was that of the temperature outside, except on very cold days, at which time the steam radiators were turned on to produce a temperature of 45 degrees.

Results.

Comparison of the open-window room and the warm-air room were made on the basis of weight, the individual records, however, taking into account the height and chest circumference.

In each class there were 45 children.

The initial measurements were made in September, 1912.

In the open-window room the total weight of 25 boys was 15,026 pounds (average 61 1-25 pounds).

The total weight of 20 girls was 12,047 pounds (average 62 7-20 pounds).

In the warm-air room the total weight of 32 boys was 21,015 pounds (average 66 3-32 pounds).

The total weight of 13 girls was 877 pounds (average 67 6-13 pounds).

Measurements in this class were made each week, partly to gauge the physical progress of the children and partly to stimulate the interest and enthusiasm in the cause of fresh air on the part of the pupils.

The final measurements were made December 20, 1912, three months after the initial measurements, and from these were made the comparisons now to be recorded.

In the open-window class the average gain was 2 3/16 pounds; in the ordinary closed-window class the average gain in weight was 13/16 pound.

These results are certainly encouraging. It is intended to pursue the experiment for a full year so that figures of acknowledged value may be obtained. Knowing that the average gain of a child under 12 years of age should be five to six pounds per year, it is evident that the children in the closed-window class hardly showed the gain to be expected of them. On the other hand, the gain in weight of the pupils in the fresh-air class approximated what one would expect normally. Without a full year's observation, including thereby the variations of increase due to season, the obvious thing to do is to accept the better results in nutrition in the open-air class qualifiedly, with the intention to definitely prove the superiority of the class, if such superiority does exist after a full year's experiment.

The scholastic progress of the children in the fresh-air class was noticeably better than that in the ordinary class. Semi-annual tests, which are now taking place at the time of this writing, show that every child in the open-window class has been promoted with the exception of one who was excluded from school for some time by the Bureau of Health on account of some contagious disease in the family. On the other hand, were several failures among the children of the ordinary closed-window

class. None of these have an adequate excuse for failure. Mr. Walter Bishop, principal of the Bache School, states that the children in the open-window class were noticeably brighter in all departments of their school work, and that the teachers of the respective classes were about equal in ability, so that the personality of the teacher was also to be eliminated. These last important educational results may not be given here, partly because of the medical end of this report and partly because they will be published subsequently by Mr. Bishop or some one of those directly interested in the work.

Plans for the Future.

The open-air classes so far established have originated through the initiative of individuals, without primary reference to neighborhood needs, although, fortunately, they are well placed. The next step is to inaugurate a comprehensive plan providing for: (a) Special classes for poorly-nourished children similar to those already described; (b) special classes for actively tuberculous children, who are now without accommodations; (c) fresh-air classes in large numbers if these be proven advantageous.

The supervision of special classes has been placed by Dr. Brumbaugh in the hands of Associate Superintendent Cornman, whose interest, ability and co-operation with the Division of Medical Inspection are well known. Acting in understanding with Dr. Cornman, the Director of this division is filing the names of actively tuberculous children reported to this office by the school inspectors so that a special class for these children may soon be established. There is a fair probability of the transfer of the open-air class at the Lighthouse Building to the Cumberland Public School with consequent opportunity for the use of the Lighthouse roof for a class of actively

tuberculous children. The lack of an elevator at the Lighthouse Building, however, constitutes a serious drawback to the plan.

The special classes for poorly-nourished children have been given a great impetus by the recent broad-minded action of the Board of Education appropriating $200 annually for each class established.

The open-window classes may be established by the district superintendents of schools without special action by the Board of Education since the teachers' salary, school hours and class curriculum are the same as usual. District Superintendent Raub is now arranging for a second class at the Bache School, and also the institution of one at the Muhlenberg School, Seventeenth and Master streets, and one at the Singerly School, Twenty-second and Berks streets. It is remarkable how parents, when the matter is put before them, are eager to place their children in these classes. It shows the results of the present-day education of the public in matters relating to hygiene and the prevention of tuberculosis. From the present outlook there is no limit to the establishment of these classes from the standpoint of the parents, and their future will rest largely on the results obtained and the facility with which they are conducted.

Illustrations in Connection with Open-Air Classes.

1. The blank forms No. 1, No. 2, No. 3 and No. 4 used for recording the physical condition of children in the special open-air classes (here attached).

2. Description of 24 children in the open-air class at the Wilson School Annex. This gives a good, clear idea of the character of the children in such a class.

FORM No. 1.

APPLICATION FOR ADMISSION TO OPEN-AIR SCHOOL.

SCHOOL INSPECTOR'S REPORT.

Name .....

Address .....

School .....

Age.....Reason for requesting admission.....

PHYSICAL EXAMINATION.

Nose and throat.....

Glands .....

Nutrition .....

Is there any evidence of tuberculosis?.....

Date .....

Approved by

.....

Principal.

Signed

.....

Medical Inspector.

FORM No. 2.

APPLICATION FOR ADMISSION TO OPEN-AIR SCHOOL.

NURSE'S REPORT ON HOME VISIT.

Name .....

Age .....

Address .....

School .....

Family History—Give age of parents, sisters, brothers; state condition of their health or cause of any deaths; has there been, or is there, any consumption in the family at the present time?

Previous History of Applicant—State any illness child has had.

Present Health of Child—Give mother's statement and nurse's observation. Does applicant expectorate?

Sanitary Condition of Home—Number of rooms in house; number of inmates; size of sleeping room, amount of air and light.

What does the child get to eat at home?

Date .....

.....

Nurse.

Physical Condition of Children in Open-Air Class, Wilson School Annex.

Case.	Sex.	Age.	Nationality.	Family history.	Home conditions.	Reason for admission.	Weight.		Remarks.
							October, 1911.	June 14, 1912.	
							Pounds.	Pounds.	
1	Female	10	Italian	Negative	Fair	Anaemia, cough. Flat chest	50½	55	Physical and mental improvement marked.
2	Female	11	Italian	Negative	Very poor	Poor nutrition. Under weight	49½	53	Adenoids and tonsils removed, May 9, 1912. Defective teeth treated at Dental Dispensary, City Hall.
3	Female	8	Italian	Mother died at 38 of tuberculosis	Fair	Predisposed to tuberculosis	46	50	Especial mental improvement.
4	Female	14	American	Mother and father died of tuberculosis	Good	Malnutrition; under weight. Family history tubercular	70¼	77	When 9 years old was operated on for swollen glands. Defective teeth treated at Dental Dispensary, City Hall.
5	Female	14	Italian	Negative	Poor	Anaemia	82	90	Under treatment at Dental Dispensary, City Hall
6	Female	10	Italian	Negative	Fair	Spinal curvature with bony adhesions of chest	55¼	58½	X-ray shows.
7	Male	11	American	Mother died of tuberculosis	Fair	Anaemia, cough	64	63	Smokes cigarettes. Mentally dull.
8	Male	15	Jewish	Negative	Good	Convalescing from appendicitis	85½	88	Operated on February, 1912, for appendicitis.
9	Male	9	Italian	Negative	Poor	Anaemia, poor nutrition, and stoop shouldered	50	53	Slow physical and mental improvement.
10	Male	10	Italian	Negative	Poor	Malnutrition, anaemia	57½	57½	Tonsils removed, April, 1912.
11	Male	11	Italian	Negative	Fair	Poor nutrition	65	70½	Uses brace on deformed knee.
12	Male	12	Jewish	Negative	Poor	Malnutrition, cough and barrel-shaped chest	65½	64	Making progress slowly.
13	Male	14	Italian	Negative	Fair	Under weight and anaemia	67	68	Under treatment at Dental Dispensary, City Hall
14	Male	9	American	Negative	Good	Convalescing from pneumonia	52½	55½	Defective teeth treated at Dental Dispensary, City Hall.
15	Male	13	American	Negative	Good	Anaemia. Family of neurotic tendency	67½	74	Defective teeth treated at Dental Dispensary, City Hall.
16	Male	14	Italian	Negative	Poor	Anaemia and malnutrition	68¼	76	Tonsils and adenoids removed.
17	Female	14	Italian	Negative	Poor	Cervical adenitis	82	86	Operated on for enlarged glands in neck, March, 1912.
18	Male	13	Italian	Negative	Good	Laryngitis and malnutrition	77¾	86½	Under physician's care.
19	Male	9	Italian	Negative	Good	Cough and chronic bronchitis	57	57	Improves very slowly.
20	Female	11	Jewish	Mother died of consumption; two brothers and one sister tubercular	Fair	Predisposed to tuberculosis	71	71	Shows evidence of inherited predisposition.
21	Male	9	Italian	Negative	Poor	Anaemia and under weight	41	42	Anaemia improved.
22	Female	8	Italian	Negative	Good	Pigeon-breasted; heart action irregular	44	46	Improved mentally.
23	Male	12	Italian	Negative	Fair	Pigeon-breasted, with chronic cough	66	68	Mentally deficient.
24	Male	8	Italian	Negative	Fair	Anaemia	38¼	40½	Mentally deficient.

FORM No. 3.

APPLICATION FOR ADMISSION TO OPEN-AIR SCHOOL.

Supervisor's Report and Recommendation.

Name of Pupil .....
Address .....
School .....
Age.....Reason for requesting admission.....
Family History (Summary).
Previous History of Applicant.

Physical Examination.

General appearance (nutrition, flat-chested, stoop shoulders)..
.....
Nose and throat.....
Heart (pulse) .....
Lungs (expansion) .....
Miscellaneous findings .....

Laboratory Examination.

Sputum .....
Blood .....
Recommendations .....
Open-air class .....
Date .....

Signed

.....

Approved by Medical Supervisor.

.....

District Superintendent.

FORM No. 4.

CHILD'S PHYSICAL RECORD—OPEN-AIR SCHOOL.

Name .....
Address .....
School .....
Age .....
Nationality .....
Date .....
Temperature—A. M. .....P. M. .....
Pulse—A. M. .....P. M. .....
Weight .....
Miscellaneous .....
Sputum-blood .....

XX. Children Visited at Their Homes at the Request of the Bureau of Compulsory Education.

The Division of Medical Inspection acts as official medical adviser for the Bureau of Compulsory Education when medical judgment is sought whether or not to excuse a child on account of reputed ill-health. Under these circumstances the Bureau of Compulsory Education notifies the Bureau of Health of the name and address of the child to be investigated. The school inspector in turn visits the house and makes a report on the physical condition of the child, with a recommendation for or against attendance at school. Excuses from school when given are often for a limited period rather than permanently. The examination of the child at the home is, of course, optional with the parent, but since compulsory education is a part of the law of the State the question, if brought into court, would be determined by expert medical advice, and consequently the procedure here outlined is offered to the parent as a probable friendly rather than unfriendly measure.

The number of children visited at their homes under above conditions during the year 1912 numbered 150.

XXI. Physical Examinations of Applicants for Position of School Janitor.

The School Code provides that no person shall be employed in the schools who is infected with tuberculosis. In accordance with this provision, a physical examination has been made of applicants for the position of school janitor at the request of Mr. J. Horace Cook, Superintendent of Buildings of the Board of Education. Moreover, it is the thought of the Superintendent of Buildings that this examination provides a desirable means of information as to the general health of such applicants, and

therefore the physical examination given is in the nature of a life insurance examination. It should be remembered that the modern, large school buildings require janitors who are also engineers, and such employees should be of a far higher general grade than those employed in the small schoolhouses of ancient type.

Thirty-two applicants for employment by the Superintendent were examined at the Central Office, of whom 30 were recommended for acceptance and two for rejection.

XXII. Special Examinations of High School Pupils Competing in Athletic Sports.

By resolution of the Board of Education no high school pupil may compete in athletic sports unless such pupil furnishes a written consent from the parent and a certificate of sound health from a physician. About one-half of the high schools of the City are without physicians connected with the school faculty. Here the medical inspectors have performed this work upon request. A certain number of the pupils have been denied certificates to their personal disappointment, but certainly to their real benefit. Among the causes of rejection weak heart is the most common. A case of double hernia in a boy intending to play football was a rather remarkable condition presented.

XXIII. Certifications to the Board of Education of Exclusions and Readmissions of Teachers.

The rules of the Board of Education provide that school teachers, when making every endeavor to return to school as speedily as possible when excluded because of contagious disease, shall be granted relief from loss of salary, in whole or in part, according to the nature of the case. That this generous rule of the Board shall be

accorded fair and just usage it has been the practice of this division to certify, upon request, the circumstances attendant upon each case, such records being obtained from the Division of Contagious Diseases.

XXIV. Exhibits on Medical Inspection.

During the year a chart-exhibit on medical inspection has been prepared covering some 500 square feet of wall space. It portrays many of the items enumerated in this report. The exhibit is grouped under four heads: (a) Economic investigation; (b) clinic investigation; (c) administration of medical inspection; (d) defects and diseases of children.

This exhibit has been shown at the College of Physicians during the visit of the New York, New England and New Jersey Pediatric Societies; at the Central High School in connection with a series of principals' meetings designed to interest the principals in the details of medical inspection; at Horticultural Hall, during the Baby-Saving Show, and in the Mayor's reception room of the City Hall, during the Child-Welfare Conference.

XXV. Additional Volunteer Work by Medical Inspectors.

The generous co-operation and willingness of the members of the Medical Inspection Corps to perform extra volunteer service has been a gratifying feature of the year's work. With 58 inspectors it has never been difficult to obtain five or ten at any time to make scientific investigations, calculate the results of medical inspection from the thousands of record sheets filed at the Central Office, deliver addresses at various public meetings, act as emergency physicians at public gatherings of school children, *et cetera*. Considering the small salary received by the inspectors, the cheerful willingness to devote extra

time has been really remarkable. Naturally it has been the practice of the office when requesting volunteer service to specifically state to each inspector that his services were not desired if he had already made some other engagement for the time under consideration.

XXVI. Special Investigations.

The opportunity for scientific investigation in the course of medical inspection is practically unlimited. In the field of contagious diseases, developmental defects, the association of physical defects with lowered scholarship, the prevalence of the feeble-minded, the most economic methods of administration, the diagnosis of contagious diseases, the spread of epidemics, the relation of diseased throats to certain infections, the influence of good ventilation upon physical and mental vigor and beneficial effects of scientifically prepared food at lunch time furnish opportunity for more work of this kind than is justified by the general nature of medical inspection work. However, endeavor has been made to conduct such studies as affect the administration of medical inspection, with the purpose of efficient and economic administration, and other studies regarding the spread of contagious diseases, with the purpose of reducing the morbidity rate of the schools, and therefore of the City. Much of this work, which might well be done entirely within school hours, has been done by school inspectors during the Christmas and summer vacations as a part of the volunteer work mentioned in one of the preceding sections.

The investigation on the proportion of defects corrected under different conditions, loss of time from minor contagious diseases, spread of diphtheria, spread of scarlet fever, desirability of oiled floors and best method of disinfection are mentioned elsewhere in detail in this report.

Experiments to Determine the Relative Value of Different Methods of School Cleaning and Disinfection in Relation to the Prevalence of Infectious Diseases.

Five series will be made, each series including a different method of school cleaning.

Four schools in each series, these schools being taken from different parts of the City, but corresponding school for school in each series—one old building in the foreign quarter, one old school building in Kensington, one modern school building in Germantown and one modern building in the southern part of the City with a fair industrial population.

In the first series the schools will be swept and treated as is now ordinarily done. This series is simply a check.

In the second series the desks and floors will be daily sprayed with a bactercidal solution.

In the third series the floors will be oiled.

In the fourth series the floors will be wiped every day with a damp mop (water).

In the fifth series the floors will be swept with saw-dust moistened with carbolic acid solution.

The experiment is to begin January 20th and to continue for two months.

Ordinary sweeping (check series).	Sprayed with bactericidal solution.	Oiled floors.	Ordinary water scrubbing.	Carbolic and saw-dust.
Meredith	Washington	Read	Wharton	Mt. Vernon.
Adaire	Vaughn	Webster, 17th Section	Adams	Miller, Front and N.
Mt. Airy	Curtin	Henry	Pastorius	Bringhurst.
Benson	Girard	Childs	Baldwin	Drexel.

The value of any particular method will be measured by the absence of contagious diseases. During the ex-

periment a record will be kept of the number of reportable contagious diseases—scarlet fever, diphtheria, chicken-pox, measles, whooping cough and mumps, and also the number of acute sore throats encountered by the inspectors. If an epidemic occurs in any school a statement will be made of the conditions in the neighboring schools.

Note:—

The experiment has been carried out while this report was in press. The results are interesting. They will be published in the near future.

Inquiry Among 56 School Principals and 45 School Janitors Regarding the Desirability of Oiling the Floors of the School Room.

The danger of dust from the floors of the public halls as a cause of tuberculosis, nasal catarrh and many of the acute contagious diseases is well recognized. The evil of dry sweeping of school rooms has been widely condemned. The vacuum cleaner, the damp mop, the oiled floor, the oiled railroad bed and the oiled public highway represent the endeavor to abate the dust evil.

Notwithstanding that the oiling of a school-room floor causes a striking diminution in the amount of dust during school hours and also during the after-school sweeping, the practice was discontinued early in 1912 by official order in the public schools, owing to complaints against it on the part of principals and teachers.

For the purpose of ascertaining whether the sanitary benefits of the measure are outweighed by its disadvantages an investigation was undertaken by the Division of School Medical Inspection.

The benefit from a sanitary standpoint was undoubted; the stated disadvantages due to accident on slippery sur-

faces and the soiling of clothing were not accurately known. The school inspectors were accordingly directed to question the school principals and school janitors and secure from these, if they cared to give them, opinions as to the desirability of oiled school-room floors. Within two weeks the statements of 56 principals and 45 janitors were secured and results were tabulated. It was at once evident that the factor of soiled skirts influenced the women against the practice, and that in the case of the janitors the replies were influenced by the amount of work required.

Of 56 school principals furnishing opinions 19 were men and 37 were women. Of the male principals 14 of the 19 were favorable to oiled floors, while of the women principals only 10 out of 37 were favorable.

The reasons advanced by the principals, here given, are taken as a whole. A reason did not accompany every opinion, so that the "reasons" and the "principals" do not tally in number. There were five favorable opinions on the ground that the measure was sanitary and six on the ground that the appearance of the floor was improved. There were 22 unfavorable opinions on the ground of accidents, eight on the ground that the practice was unsanitary, 19 for the reason that it ruined skirts and four that the oil was dirty.

The janitors' replies were also interesting. Taken as a whole, 33 were favorable and 12 unfavorable; an attitude undoubtedly influenced by the great reduction in the daily work if the floors were oiled, and, moreover, a proven attitude, since during the period that some of the Philadelphia schoolhouse floors were oiled the janitors were compelled to purchase their own oil. The janitors, all being men, the "skirts" factor was eliminated. Reasons advanced by janitors in favor of oiled floors

were: Six that it was sanitary and eight that it decreased the amount of work to be done. On the other hand, two janitors were unfavorable to oiled floors on the ground that it was unsanitary and one on the ground that the floors were difficult to clean.

From this questionnaire it may be reasonably deduced that the practice of oiling the floors, when originally brought to the attention of the school janitors as a voluntary measure to be done entirely at their own expense, was largely adopted by them for the reason that it decreased the amount of work. On the other hand, the skirts of a sufficient number of women principals were injured to produce a complaint strong enough to forbid the practice throughout the schools. The question of the health of the children did not enter into the matter except as regards accidents from slipping on the floors and stairs. Undoubtedly some accidents did occur, but none were specifically mentioned in the records, and, so far as the writer is aware, nothing of a serious nature has ever happened. At first thought, a sanitarian would recommend that a skirt which, by reason of its length, prohibits a sanitary measure, be shortened. It seems, however, that this is impossible with our present standards of modesty, especially when the wearer is sitting down, and, naturally, teachers sit at their desks a considerable part of the school day.

It may be noted also that the crude oil, while unfavorable to germ life, is not an antiseptic of any power. The dust, containing germs from the mouths and noses of the children, lies upon the floor held by the oil. Consequently a janitor who happily oils his floors with the purpose of ignoring the whole matter of cleanliness for a period of one or two weeks, causes the accumulation on these floors of huge quantities of greasy dirt, and some

of this matter may possibly be of doubtful innocuousness as regards disease and positive objectionableness as regards cleanliness and the preservation of clothing. Under these circumstances it would seem that some method of keeping the school room clean other than oiled floors should be secured if possible. If no such method can be found, then the question of the soiling of clothing by the oil, the question of guarding against the excess of oil and proper requirements that the oiled floors be cleansed at regular intervals should be considered before the measure is introduced. Apparently the best measure under the present circumstances is to cleanse the floors daily with a damp mop, such a practice preventing dust, and at the same time revealing the degree of endeavor on the part of the janitor.

Papers Read and Published by the Division of Medical Inspection of Public Schools, 1912.

1. "Medical Inspection of Public Schools." Dr. W. S. Cornell. College of Pharmacy, Philadelphia, November 25th.
2. "Problem of the Feeble-minded in Pennsylvania." Dr. W. S. Cornell. Pennsylvania State Federation of Women's Clubs, Williamsport, October 16, 1912.
3. "Social Service in the Schools." Dr. W. S. Cornell. Pennsylvania Conference of Charities and Corrections, Wilkesbarre, Pa., October 29th, 30th and 31st.
4. "What Philadelphia is Doing for the Children." Dr. W. S. Cornell. Civic Day, Lemon Hill, Philadelphia, September 15th.
5. "Medical Inspection of Schools and Its Relation to the Prevention of Tuberculosis." Dr. W. S. Cornell. Pennsylvania Conference of Tuberculosis Workers. Bellevue-Stratford Hotel, Philadelphia, April 2d.
6. "Remediable Conditions in the Feeble-minded and Backward." Dr. W. S. Cornell. Conference on the Conservation of School Children, auspices of the American Academy of Medicine. Lehigh University, South Bethlehem, Pa., April 3d and 4th.

7. "School Medical Inspection." Dr. Walter S. Cornell. Homeopathic State Medical Society, Delaware Water Gap. Pa., September 17, 1912.
8. "Medical Inspection of Public Schools." Dr. W. S. Cornell. Pennsylvania State Medical Society, Scranton, Pa., September 25th and 26th.
9. "Medical Inspection of Public Schools." Dr. W. S. Cornell. Annual Meeting of the Directors of Chester County, West Chester, Pa., April 15th.
10. "Medical Inspection and Mental Deficiency." Dr. W. S. Cornell. Six lectures, post-graduate physicians' course at the New Jersey Training School for Feeble-minded Children, September, 1912.
11. "Child Hygiene." Dr. W. S. Cornell. Six lectures, post-graduate course for physicians, University of Pennsylvania, April and May.
12. "Child Hygiene and Medical Inspection." Dr. W. S. Cornell. Eight lectures, Philadelphia Training School for Social Work, February and March.
13. "Medical Inspection of Schools." Dr. W. S. Cornell. Teachers' play and recreation course, Philadelphia Board of Education, May, 1912.
14. "Medical Inspection of School Children." Dr. W. S. Cornell. Physical Directors' Association, June, 1912.
15. "Crotalin Treatment of Epilepsy." Dr. Ralph H. Spangler. The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, Vineland, N. J., June 3d.
16. "Hypodermic Injections of Crotalin in the Treatment of Epilepsy." Pennsylvania State Medical Society, Scranton, Pa., September 25th. (Dr. Ralph H. Spangler.)
17. "The Role of the School in the Spread of Scarlet Fever." Dr. W. W. Roach. American Journal of Public Health, 1912.
18. "The Diagnosis of Mental Deficiency." Dr. Matilda Osborne. Medical Society of Women's Hospital, Philadelphia, November 18, 1912.
19. "Economic Efficiency in the Development of Medical Missions by Women in the Far East." Dr. Ellen C. Potter. Interdenominational Conference of the Women's Board of Foreign Missions of the United States and Canada, at Methodist church, Eighteenth and Spruce streets, February 28, 1912.

20. "The Relation of Medical Women to Preventive Medicine." Dr. E. C. Potter. Medical Club of the Women's Medical College of Pennsylvania, at Philadelphia, November 16, 1912.
21. "How to Keep Well." Dr. Ellen C. Potter. Mothers' Club of the Y. W. C. A. of the Falls of Schuylkill, in the Y. W. C. A. Building, Falls of Schuylkill, January 2, 1913.
22. "School Medical Inspection." Dr. Hannah M. Hunsicker. Alex. Henry Home and School League, Henry School, November 22, 1912.
23. "School Medical Inspection." Dr. Hervey L. Bates. Unity Club of Germantown, Unitarian Church, Germantown, November 8, 1912.
24. "Cerebral Hemorrhage and Demonstration of Brain of a Case." Dr. John P. Turner. The Aesculapian Medical Society of New York City, September 28th.
25. "Cerebral Hemorrhage and Demonstration of Brain of Case." Dr. John P. Turner. Faculty and students of Medical Department of Shaw University of Raleigh, N. C., December 23d.
26. "Mental Deficiency—Its Occurrence, Diagnosis—What the Public Schools of Philadelphia Are Endeavoring to Accomplish for the Backward Child." South Philadelphia Medical Association, October 8, 1912. Dr. James McG. Hincken.
27. "Liberal Feeding in Typhoid Fever." Dr. Bernard Kohn. North Branch of Philadelphia County Medical Society, February 20, 1912. Published in Pennsylvania Medical Journal, 1912.
28. "Importance of Securing Correction of Physical Defects of Children." Dr. A. F. Moxey. Schaeffer Home and School Association, April, 1912.
29. "School Medical Inspection." Dr. Albert F. Moxey. Curtin School, Home and School Association, May, 1912.
30. "School Hygiene." Dr. Albert F. Moxey. Three lectures, Pennsylvania Summer School, University of Pennsylvania, July 3d and 5th.
31. "Infant Hygiene." Dr. Albert F. Moxey. Baby Saving Show, Germantown Y. M. C. A., November, 1912
32. "Urinalysis, Bacteriology, Hygiene." Dr. A. F. Moxey. Series of lectures, Senior Class nurses, Germantown Hospital, November, 1912.
33. "Wassermann Reaction." Dr. Albert F. Moxey. The New Jersey Training School, Vineland, N. J., September, 1912.

34. "Medical Treatment of Hemorrhage, with Especial Reference to Bleeding from the Nose, Stomach, Bowels and Lungs." Dr. I. Bram. Merck's Archives, December, 1911, and January, 1912.

35. "A Case of Marked Exopthalmic Goitre Cured by Medicinal Treatment." Dr. I. Bram. Medical Era, St. Louis, March, 1912.

36. "Headache, Its Etiology, Classifications and Treatment." Dr. I. Bram. Merck's Archives, June, 1912.

37. "Treatment of Angina Pectoris." Dr. I. Bram. Medical Summary, July, 1912.

38. "Suspended Heart Action in Acute Dilatation, Cardiac Massage, Recovery." Dr. I. Bram. Journal A. M A., August 17, 1912.

39. "Diagnosis and Symptoms of Incipient Pulmonary Tuberculosis." Dr. I. Bram. Gazette, September, 1912.

40. "Hygienic Advice in Incipient Pulmonary Tuberculosis." Dr. I. Bram. Therapeutic Record, March, 1913.

41. "Abdominal Pain and Its Diagnostic Significance." Dr. Robert B. Walker. Meeting of the Berks County Medical Society, November, 1912, at Reading.

42. "The Dyspeptic." Dr. Robert B. Walker. Read at the January Meeting of the Berks County Medical Society, January, 1913.

*Work of the School Nurses.**

The corps of school nurses was enlarged in January, 1912, coincident with the reorganization of the Division of Medical Inspection of Public Schools in accordance with the provisions of the School Code of 1911. The corps now consists of a head nurse, an assistant head nurse and 22 assistant nurses. The previous corps consisted of a head nurse and eight assistant nurses.

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*The school nurses are employed by the Board of Education. By action of the board they are placed under the jurisdiction of the Superintendent of Schools, except in the matter of professional work, in which they are supervised by the Director of Medical Inspection of Public Schools. Every effort has been made to effect an efficient and harmonious working organization.

The nurses are not sufficient in number of cover all the schools of the City, and provision has so far been made for the schools in the poorer parts of the City only, except in two instances where nurses were assigned to schools in the better parts of the City for the purpose of determining their usefulness there. Of the 300 school buildings in the City 107 have nurses assigned to them. The population of the schools visited by the nurses is 83,000.

The work of the nurses is of both a medical and a social character. The unhygienic conditions, consisting largely of poor ventilation and uncleanliness, under which the poorer element of a great City live, produce numerous cases of parasitic skin diseases, eczema and infected wounds which require attention. On the other hand, the principle that permanent improvement is obtained by education of the ignorant and by the correction of those defects which exert a permanent deforming or debilitating influence has made the social work the principal activity. The social work done by the nurses consists of:

(a) Visits to homes.
(b) The conduct of children to dispensaries.
(c) School consultation with parents.
(d) School consultations with pupils.
(e) Special class-room examinations for uncleanliness, with directions to the pupil for personal improvement.

The amount of work in each of these activities was remarkably large, over 9,000 homes having been visited, over 8,000 children taken to the hospital dispensaries, nearly 3,000 parents seen at the schools, nearly 11,000 pupils urged to secure correction of physical defects and 60,000 children examined for uncleanliness.

The actual medical work of the nurses comprises first aid to the injured, the treatment of pediculosis and other

unclean cases and the treatment of minor skin diseases. The exact scope of this work has not as yet been fixed, since in the treatment of the more serious skin troubles there is always the question of how far the work of public medicine shall invade what has hitherto been (ethically) the domain of the private physician, how far nurses may be used to alleviate conditions which experience has shown are practically never relieved if a physician's fee is necessary, how far medical work is justified, for the reason that the work of the school nurse is tremendously economical compared to the work of the private practitioner, and how far the nurses may go without risk of malpractice suits. The medical work of the nurses included the handling of about 1,100 cases of eczema, 800 cases of impetigo, 900 cases of ringworm, 100 cases of scabies and 3,700 cases of wounds of all sorts, and 2,000 other skin diseases.

The physical defects handled by the nurses were about 48,000 in number; of these 5,500 were cases of defective vision, 224 were cases of defective hearing, 259 discharging ears, about 4,600 enlarged tonsils, over 1,600 adenoids, 317 malnutrition and over 9,000 cases of carious teeth. These defects, which are of a character influencing the future life of a child, take naturally first rank in importance. Of the remaining cases some 10,000 were pediculosis, and 9,000 other cases of skin disease, practically all of a minor character. A study of the list given below shows the character of the remaining defects.

The following table gives the work of the school nurses for the year of 1912 (February to December, inclusive):

1.	Schools visited	10,810
2.	Number of cases:	
	Old cases	51,052
	New cases	47,902
	Terminated	24,327

3. General character of work:

Visits to homes:	
Old	3,017
New	6,178
Children taken to dispensary:	
Old	3,568
New	4,674
School consultations:	
Parents	2,861
Pupils	108,594
Examinations for uncleanliness	60,144

4. Physical Defects and Minor Contagious Diseases Treated.

	Total cases.	Cases terminated.	Cases pending.
EYE.			
Defective vision	5,507	3,373	2,134
Corneal ulcer	24	18	6
Conjunctivitis	557	445	112
Other diseases	1,343	1,047	296
EAR.			
Defective hearing	224	87	137
Otorrhea	259	177	82
Other diseases	257	161	96
NOSE—THROAT.			
Hypert tonsils	4,578	1,993	2,585
Adenoids	1,664	654	1,010
Defective speech	58	28	30
Other diseases	2,722	1,498	1,224
Pediculosis	10,544	1,956	8,588
SKIN.			
Eczema	1,156	929	227
Pust. dermatitis	186	151	35
Impetigo	781	604	177
Ringworm	922	684	238
Scabies	126	104	22
Wounds	3,701	3,123	578
Other diseases	2,006	1,778	228
ORTHOPEDIC.			
Scoliosis	28	2	26
Hip-joint disease	7	3	4
Other diseases	117	84	33
Teeth	9,261	4,335	4,906
Malnutrition	317	187	130
Nervous	100	46	54
Miscellaneous	1,449	847	602
Tuberculosis	9	4	5
Trachoma	4	2	2
X-Ray	2	—	—
Total	47,909	24,320	23,589

Results Secured Which Involved Operations, Eye Glasses, Admission to Institutions, etc.

Defective vision	2170 pairs glasses.
	7 operations.
Other diseases of eye	4 operations.
	3 glass eyes.
Defective hearing	3 operations.
Otorrhea	5 operations.
Other diseases of ear	2 operations.
Hypert tonsils	647 operations.
Adenoids	277 operations.
Other diseases of nose and throat	58 operations.
Other diseases of skin	1 operation.
Other orthopedic diseases	1 pair shoes.
Miscellaneous	9 operations.
Admitted to Home for Consumptives and House of Mercy, Chestnut Hill	3
Admitted to Pennsylvania Institute for Deaf and Dumb, Mt. Airy	2
Admitted to Eastern Pennsylvania State Institution for Feeble-minded and Epileptic, Spring City, Pa.	4
Admitted to Pennsylvania Training School for Feeble-minded Children, Elwyn, Pa.	1
Admitted to Widener Memorial Industrial Training School for Crippled Children	1
Applications filed for sending children to seashore and country	109

E. LOUISE JOHNSON,
Head Nurse.